JANUARY 3, 2023
ADVERTISEMENT

EXHIBIT A

SCOPE OF SERVICES

FOR

# CONTINUING SERVICES DESIGN CONSULTANT

FINANCIAL PROJECT ID. (FPID): **418439-3-32-07 and VARIOUS**

FEDERAL PROJECT NO. **VARIOUS – DETERMINED BY TASK**

## FDOT District Three

Table of Contents

**SCOPE OF SERVICES FOR CONSULTING ENGINEERING SERVICES**
**HIGHWAY AND BRIDGE/STRUCTURAL DESIGN**

This Exhibit forms an integral part of the agreement between the State of Florida Department of Transportation (hereinafter referred to as the DEPARTMENT or FDOT) and *[Consultant Name or leave blank until CONSULTANT is selected]* (hereinafter referred to as the CONSULTANT) relative to the transportation facility described as follows:

Financial Project ID: ***418439-3-32-07 & VARIOUS***

Federal Aid Project No.: ***VARIOUS***

Description: ***CONTINUING SERVICES DESIGN CONSULTANT***

## 1 PURPOSE

The purpose of this Exhibit is to describe the ***possible*** scope of work and the ***range of*** responsibilities of the CONSULTANT and the DEPARTMENT in connection with the design and preparation of a complete set of construction contract documents and incidental engineering services, ***for each specific project to be assigned to the CONSULTANT under this Agreement (hereinafter called "the assigned project"). Each such assignment shall be made with the issuance of a Task Work Order authorization with an accompanying scope of services; no work on a specific project shall begin until a Task Work Order for that project has been authorized in writing under this Agreement by the DEPARTMENT.***

- Major work mix include: ***9980 - PRELIMINARY ENGINEERING***
- Major work groups include: ***3.1, 4.1.2***
- Minor work groups include: ***4.1.1, 5.4, 6.1, 6.3.1, 6.3.3, 7.1, 7.2, 7.3, 8.1, 8.2, 8.3, 8.4, 9.1, 9.2, 9.4.1, 9.4.2, 14, 15***

***Alternative construction contracting methods have NOT been identified for this project at this time.***

The general objective is for the CONSULTANT ***to perform miscellaneous engineering services required to design and prepare contract documents*** including plans, specifications, supporting engineering analysis, calculations and other technical documents in accordance with FDOT policy, procedures and requirements. These Contract documents will be used by the contractor to build the project and test the project components. These Contract documents will be used by the DEPARTMENT or its Construction Engineering Inspection (CEI) representatives for inspection and final acceptance of the project. The CONSULTANT shall follow a systems engineering process to ensure that all required project components are included in the development of the Contract documents and the project can be built as designed and to specifications.

***Design elements of work may include, but not be limited to, roadways, structures, intersections, design surveys, drainage, signing and pavement markings, signalization, lighting, right-of-way maps, maintenance of traffic, environmental permits, utility coordination and relocation, cost estimates, design documentation, geotechnical investigation and testing, QA/QC and all necessary incidental items for a complete project. The CONSULTANT may be required to serve as a liaison to local agencies within District 3 and provide technical support and coordination in the development Local Agency Program (LAP) projects.***

The Scope of Services ***for each assigned project will establish*** which items of work in the Plans Preparation Manual and other pertinent manuals are specifically prescribed to accomplish the work included in this contract, and also indicate which items of work ***may*** be the responsibility of the CONSULTANT and/or the DEPARTMENT ***for an assigned project. The identified projects may be on State Highways, County Roads and/or City Streets within the sixteen (16) counties of District Three***.

The CONSULTANT shall be aware that as ***an assigned*** project is developed, certain modifications and/or improvements to the original concepts may be required. The CONSULTANT shall incorporate these refinements into the design and consider such refinements to be an anticipated and integral part of the work. This shall not be a basis for any supplemental fee request(s).

The CONSULTANT shall demonstrate good project management practices while working on this project. These include communication with the DEPARTMENT and others as necessary, management of time and resources, and documentation. The CONSULTANT shall set up and maintain throughout the design of the project a contract file in accordance with DEPARTMENT procedures. CONSULTANTs are expected to know the laws and rules governing their professions and are expected to provide services in accordance with current regulations, codes and ordinances and recognized standards applicable to such professional services. The Consultant shall provide qualified technical and professional personnel to perform to Department standards and procedures, the duties and responsibilities assigned under the terms of this agreement. The Consultant shall minimize to the maximum extent possible the Department's need to apply its own resources to assignments authorized by the Department.

The DEPARTMENT will provide contract administration, management services, and technical reviews of all work associated with the development and preparation of contract documents, including Construction documents. The Department's technical reviews are for high-level conformance and are not meant to be comprehensive reviews. The CONSULTANT shall be fully responsible for all work performed and work products developed under this Scope of Services. The DEPARTMENT may provide job-specific information and/or functions as outlined in this contract, if favorable.

## 2 PROJECT DESCRIPTION

The CONSULTANT shall investigate the status of the project and become familiar with concepts and commitments (typical sections, alignments, etc.) developed from prior studies and/or activities. If a Preliminary Engineering Report is available from a prior or current Project Development and Environmental (PD&E) study, the CONSULTANT shall use the approved concepts as a basis for the design unless otherwise directed by the DEPARTMENT.

***All fees and price proposals for each assigned project (Task Work Order) will be based on a negotiated schedule for final plans production. However, the deadline for this Continuing Services Design Contract will occur 60 months from Contract Notice to Proceed.***

***Each Task Work Order Scope of Service will identify the initial design considerations for each technical discipline or service applicable to the assigned project(s).***

***The Task Work Orders assigned under this contract will include projects that have been identified by the District Design Office.***

### 2.1 Project General and Roadway (Activities 3, 4, and 5)

***Each assigned project, (Task Work Order), will identify the roadway analyses and design elements applicable to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, roadway and design elements are to be in accordance with sections three (3), four (4), and five (5) of this document.***

### 2.2 Drainage (Activities 6a and 6b)

***Each assigned project, (Task Work Order), will identify the drainage analyses and design elements applicable to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, drainage design elements are to be in accordance with section six (6)a and six (6)b of this document.***

### 2.3 Utilities Coordination (Activity 7)

***Each assigned project, (Task Work Order), will identify the utility coordination activities and responsibilities to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, utility elements are to be in accordance with section seven (7) of this document.***

***The CONSULTANT shall be prepared to provide Subsurface Utility Excavation (SUE) services as a part of the contract.***

***The DEPARTMENT will be responsible for utility coordination associated with this project.***

***The CONSULTANT may be required to provide utility relocation design in an assigned project.***

***The Surveyor of Record (SOR) shall communicate with the Engineer of Record (EOR) once a project is assigned to determine the specific survey needs required for locating utilities based on the anticipated limits of construction and the proposed scope of work.***

***The CONSULTANT will identify which utilities exist within the corridor during the survey phase by calling Sunshine 811. A copy of the Sunshine 811 "design" ticket listing all utility owners within the project limits shall be provided within 10 business days of the Notice to Proceed (NTP)***.

***Once the draft design is apparent, the CONSULTANT shall determine if any additional survey is required regarding utility designations in order to provide an adequate design and accurate quantities. The CONSULTANT will coordinate with the DEPARTMENT's Design Project Manager and the District Survey Office to determine how much additional survey is required and what is the most economical method of obtaining the additional data.***

***The CONSULTANT will be responsible for showing areas that may be affected by construction. The CONSULTANT will evaluate utilities for potential impacts and prepare a Utility Conflict Matrix as directed by Section 7.7 of this document. An example Utility Conflict Matrix can be provided by the DEPARTMENT's Design Project Manager if necessary. The matrix will be required with the Phase II submittal and will be updated and submitted with every phase thereafter.***

***Above-ground utility installations that have been struck three times within the latest 5-year period shall be assessed for relocation options. For installations with a crash history WITHOUT viable options for relocation within the R/W, the CONSULTANT will be responsible for obtaining Design Exceptions. Above-ground utility installations with a crash history WITH available R/W for relocation shall be relocated or the Utility Agency Owner (UAO) will be responsible for pursuing and obtaining a Design Exception.***

***The CONSULTANT is to review the Utility Work Schedules and assure that they are compatible with the plans***.

**2.4 Environmental Permits and Clearances (Activity 8)**

***Each assigned project, (Task Work Order), will identify the environmental services and responsibilities, analyses and design elements applicable to be provided by the CONSULTANT and /or the DEPARTMENT. Unless otherwise noted, environmental services and permitting elements are to be in accordance with section eight (8) of this document.***

***The CONSULTANT shall coordinate with appropriate agencies for all necessary permits. Potential agencies requiring coordination include, but are not limited to: City of Tallahassee, Leon County, United States Coast Guard, Northwest Florida Water Management District, Florida Department of Environmental Protection, Suwannee River Water Management District, and US Army Corps of Engineers.***

***If the Coastal Construction Control Line (CCCL) as defined by the DEP occurs***

***adjacent to and within the project limits, a CCCL permit may be needed.***

***The CONSULTANT shall be responsible for the identification, coordination and applications for all permits necessary to construct this project. All application and processing fees, including fees for any public notice required by the permit, shall be paid for by the CONSULTANT.***

***The CONSULTANT shall complete the Bridge Project Questionnaire which serves as a tool to validate or disprove the navigability of the waterway and will determine whether a United States Coast Guard (USCG) permit will be required prior to construction. The blank questionnaire form can be provided by the DEPARTMENT's Design Project Manager. The completed questionnaire shall be provided by the CONSULTANT with the Phase I submittal. See Section 8.6. The DEPARTMENT's Design Project Manager will submit the complete Bridge Project Questionnaire to the DEPARTMENT's Environmental Management Office (EMO) who will in turn transmit the document to FHWA or to the USCG depending on project funding.***

***For projects within endangered species habitat, the CONSULTANT shall be cognizant of any potential impacts to the species and shall communicate and coordinate all efforts in this regard with the District's Environmental Management Office (EMO).***

***The DEPARTMENT will provide compensatory wetland mitigation in accordance with Section 373.4137, Florida Statutes if required. The CONSULTANT shall coordinate with the District Permit Coordinator if wetland mitigation is anticipated.***

**2.5 Structures (Activities 9 – 18)**

***Each assigned project, (Task Work Order), will identify the Structural analyses and design elements applicable to be provided by the CONSULTANT and /or the DEPARTMENT. Unless otherwise noted, structural analyses and design elements are to be in accordance with sections nine (9) through eighteen (18), as applicable, of this document***

**2.6 Signing and Pavement Markings (Activities 19 & 20)**

***Each assigned project, (Task Work Order), will identify the signing and pavement markings applicable to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, signing and pavement markings are to be in accordance with sections nineteen (19) and twenty (20) of this document.***

***The CONSULTANT shall be responsible for the design, details, and quantities associated with signing and pavement markings for an assigned project. The CONSULTANT shall coordinate with the DEPARTMENT's Design Project Manager and the District Roadway Design Engineer to determine the most appropriate type of edge line for an application. A wet weather audible "rumble with a bump" edge line may be required. The CONSULTANT shall evaluate the existing signage to determine the need for additional signs, correcting redundant or conflicting signage, and the replacement of damaged signs.***

***The CONSULTANT shall evaluate and design all signs to meet current Design Standards and the FDOT Multi-Post Sign Program.***

***Regarding pavement markings, the SOR shall communicate with the EOR to determine the specific survey needs required for locating pavement markings based on the anticipated needs of the assigned project and the proposed scope of work.***

***The lane widths within an urban section should be reviewed by the CONSULTANT and discussed with the DEPARTMENT's Design Project Manager to determine whether restriping to provide designated bicycle lanes or wider outside lanes should occur.***

***The existing school zone pavement markings and signage shall be closely reviewed by the CONSULTANT and redesigned/revised as necessary according to applicable standards.***

***The necessary mile marker pavement messages shall be provided on the shoulder in advance of interchanges as described in the FDOT Design Manual (FDM).***

***A No Passing Zone Study may be required***.

**2.7 Signalization (Activities 21 & 22)**

***Each assigned project, (Task Work Order), will identify the roadway analyses and design elements applicable to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, signalization design elements are to be in accordance with sections twenty-one (21) and twenty-two (22) of this document.***

***The CONSULTANT shall review and coordinate with the DEPARTMENT (and the local maintaining agency as necessary) whether to install video detection at signalized intersections where traffic detector loops are impacted by a milling operation.***

***Other potential signal work may include but not be limited to reconstructing pedestrian detectors and signal heads to meet Americans with Disabilities Act (ADA) access requirements***.

**2.8 Lighting (Activities 23 & 24)**

***Each assigned project, (Task Work Order), will identify if lighting services are applicable to be provided by the Consultant. Unless otherwise noted, lighting analyses and design elements are to be in accordance with sections twenty-three (23) and twenty-four (24) of this document.***

***The CONSULTANT may be required to assess the existing lighting along the corridor and be cognizant of lighting being proposed in other projects (see Coordination Requirements above), then determine the need for additional lighting for this project. At a minimum, this project will be responsible for providing the required lighting at new pedestrian crossing locations.***

***The criteria used for the lighting analysis includes horizontal lighting illuminance standards for roadway and sidewalk lighting and enhanced horizontal and vertical lighting illuminance standards for signalized intersections as found in the FDOT Design Manual. Existing utility poles will be utilized to mount luminaires to the extent possible. A Lighting Design Analysis Report will be produced documenting all lighting design decisions and calculations.***

***The CONSULTANT is expected to coordinate closely with the DEPARTMENT's Area Utility Manager and the area power provider in order to maximize the use of the UAO's poles and service. The DEPARTMENT's preference is for the UAO to install and maintain the necessary lights as specified by the CONSULTANT.***

***If a determination is made that the UAO is unable to provide the needed lighting services, a Supplemental Amendment will be processed with the CONSULTANT to finalize the lighting design and plans, including the service design/voltage drop calculations.***

## 2.9 Landscape Architecture (Activities 25 & 26)

***Each assigned project, (Task Work Order), will identify if landscape services are applicable to be provided by the Consultant. Unless otherwise noted, landscape and design elements are to be in accordance with sections twenty-five (25) and twenty-six (26) of this document.***

***When required on an assigned project, include coordination with existing and/or proposed underground utilities including but not limited to FDOT lighting, drainage and ITS. Landscape coordination with ITS shall include both underground conflicts and above-ground impacts to existing and/or proposed ITS coverage. The CONSULTANT shall closely coordinate with the Department's ITS units to ensure that all conflicts are identified, addressed and mitigated in the Contract Documents.***

The Engineer of Record (EOR) and the Landscape Architects (LA) shall have close coordination during the design of the major features of the project to ensure that roadway and roadside features that visually influence the corridor are designed to comply with the Department's Highway Beautification Policy.

***This coordination includes the following, at a minimum:***

- ***Roadway design to influence typical section design, median design, retaining walls, bicycle and pedestrian features***
- ***Drainage Design to influence pond siting, ditch design and stormwater management facilities. SMFs should be designed as a visual amenity.***
- ***Utility Design to influence the location of lighting, ITS, signalization and the locations of other above and below ground utilities.***
- ***Structures design to influence retaining walls, culverts, bulkheads, railings, etc.***

**2.10 Survey (Activity 27)**

***Each assigned project, (Task Work Order), will identify the survey services applicable to be provided by the CONSULTANT and /or the DEPARTMENT. Unless otherwise noted, survey services are to be in accordance with section twenty-seven (27) of this document.***

Design Survey: ***Design survey requirements will be conducted by the CONSULTANT in accordance with Section 27.0 of this document.***

***Pre-Production Survey Meeting*** ***- The CONSULTANT and SURVEYOR shall communicate with the District Surveyor and DEPARTMENT's Design Project Manager prior to beginning an assigned project to determine the appropriate survey requirements for the project based on the anticipated limits of construction and the proposed scope of work. The CONSULTANT shall provide a basic graphic depiction and/or description of areas needed for topographical survey, DTM, cross sections, utilities, drainage structures, pavement markings, and wetland lines. Aerial imagery is recommended. The effort for the survey work defined in this meeting will be included in the Basic Services of work.***

***Production Survey Meeting*** ***- Following the Phase I submittal, the CONSULTANT, SURVEYOR, the District Surveyor, and the DEPARTMENT's Design Project Manager shall meet if it is determined that additional survey is required in order to provide an adequate design and accurate quantities. The CONSULTANT shall provide any necessary graphic depictions and/or descriptions of areas needing additional survey. Compensation for the additional survey work defined in this meeting will be made available through the effort under Section 27.29, Supplemental Surveys and/or through a Supplemental Amendment.***

***The CONSULTANT shall be prepared to provide Subsurface Utility Excavation (SUE) services as a part of the contract.***

**2.11 Photogrammetry (Activity 28)**

***Each assigned project, (Task Work Order), will identify the photogrammetry elements applicable to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, photogrammetry services are to be in accordance with section twenty-eight (28) of this document.***

***Photogrammetric services via the use of mobile LiDAR, low altitude LiDAR or low altitude Photogrammetry will be required as determined and directed by the District Surveyor. Consultant requirements are found in Activity 28 and Activity 30 of this document.***

**2.12 Mapping (Activity 29)**

***Each assigned project, (Task Work Order), will identify the mapping elements applicable to be provided by the CONSULTANT and/or the DEPARTMENT.***

***Unless otherwise noted, mapping services are to be in accordance with section twenty-nine (29) of this document.***

***For projects with right-of-way acquisition, as early as possible, the CONSULTANT shall provide map(s) or plan sheets accompanied by a *.kmz file reflecting the requirements for additional right-of-way. The right-of-way requirements submittal shall identify, via highlighting in varying colors (not yellow), the existing right-of-way, required right-of-way, temporary construction easements (TCEs), perpetual easements, intended license agreements (LAs), and limits of construction. In addition, this submittal will indicate in some way whether the submittal is draft or final. The initial, draft requirements submittal and subsequent draft requirements submittals can be submitted electronically to the DEPARTMENT's Design Project Manager. An updated *.kmz file is expected with each resubmittal. The requirements are not considered final until indicated by the DEPARTMENT. Once the requirements are approved, the CONSULTANT shall designate each sheet as "final" and transmit to the DEPARTMENT's Design Project Manager in *.pdf format (the file name shall include the FPID number). The effort for this task will be negotiated in Section 29.7.***

Control Survey Map: ***When necessary, the R/W Control Survey Maps will be prepared by the CONSULTANT or by the DEPARTMENT as determined and directed by the District Surveyor.***

Right-of-Way Map: ***When necessary, the R/W Maps will be prepared by the CONSULTANT or by the DEPARTMENT. as determined and directed by the District Surveyor.***

Maintenance Map: ***If maintained right-of-way is to be determined for an assigned project, Maintenance Maps will be prepared by the CONSULTANT or by the DEPARTMENT as determined and directed by the District Surveyor.***

***If maintained right-of-way is being established in the field a representative from D3 Survey or D3 Mapping will need to be present (along with a representative from the local municipality if off-system) to ensure maintained right-of-way is established properly.***

Legal Descriptions: ***To be prepared by the CONSULTANT.***

Miscellaneous Items: ***Depending on the TIITF determination, a TIITF sketch may be required for an assigned project. The CONSULTANT will be responsible for preparing the TIITF sketch if required.***

**2.13 Terrestrial Mobile LiDAR (Activity 30)**

***Services related to Terrestrial Mobile LiDar via the use of conventional mobile LiDAR, low altitude LiDAR or low altitude Photogrammetry will be required as determined and directed by the District Surveyor. Consultant requirements are found in Activity 28 and Activity 30 of this document.***

**2.14 Architecture (Activity 31)**

***Each assigned project, (Task Work Order), will identify the architectural elements applicable to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, architectural services are to be in accordance with section thirty-one (31) of this document.***

***LEED (Leadership in Energy and Environmental Design)***

***The intent of the LEED Green Building Rating System is the promotion of the design, construction and maintenance of buildings that are durable, healthy, affordable, and environmentally sound. This is achieved through an approach that looks not only at the building but also includes the surrounding area. Among the elements LEED includes are access to public transportation, energy usage, daylighting and views, indoor air quality, transportation, water usage, stormwater runoff, recycling, and renewable resources.***

***Prerequisites and credits are the two types of tasks required by LEED to rate a building's environmental impact. Prerequisites are mandatory and must be achieved for a building to meet any certification level; however no points are earned for their completion. Points are earned for each credit that is achieved with points varying from credit to credit. Not all credits will be achievable due to external conditions while other credits will be too involved or costly to pursue. This is where the design team and the FDOT must determine what credits are to be pursued and the level of certification to strive to meet.***

***The State has set "Certified" as the minimum target level of certification for buildings, though several Department projects have strived for a LEED Green Building Rating of "Silver".***

***Hours include the efforts to design and receive certification for buildings. These hours include all disciplines involved in the effort.***

**2.15 Noise Barriers (Activity 32)**

***Each assigned project, (Task Work Order), will identify Noise Barrier elements to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, Noise Barrier elements are to be in accordance with section thirty-two (32) of this document.***

**2.16 Intelligent Transportation Systems (Activities 33 & 34)**

***Each assigned project, (Task Work Order), will identify ITS elements applicable to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, ITS services are to be in accordance with section thirty-three (33) and thirty-four (34) of this document.***

***For all assigned projects with ITS activities, the CONSULTANT shall identify and protect existing ITS infrastructure. Coordination with the DEPARTMENT's Traffic Operations office and County ITS offices will be required to determine any enhancements or impacts to the ITS system.***

***The Federal Highway Administration issued Rule 940 entitled Intelligent***

***Transportation Systems (ITS) Architecture and Standards to ensure new projects conform to the National ITS Architecture and standards as well as with a regional ITS architecture developed to reflect the local needs, issues, problems, and objectives for implementation.***

***For all assigned projects with ITS activities, the CONSULTANT shall follow the Rule 940 requirements and use a Systems Engineering approach for the determining the requirements for the project. The CONSULTANT shall develop all necessary documents to support the Rule 940 requirements like Concept of Operations (ConOPS), Systems Engineering Management Plan (SEMP), Requirements Traceability Verification Matrix (RTVM) and others as deemed necessary by the Department.***

***The ITS shall operate from the*** District III ***TMC located in Chipley, FL using the SunGuide$^{TM}$ (SunGuide) Software, or if SunGuide is not in use at the District III TMC, using the appropriate*** software package***.***

***Geographical Information System (GIS) Requirements: The CONSULTANT shall include in the design the GIS data collection requirements and deliverables for integration with SunGuide software and other Department GIS based asset management applications like ITS FM software. All updates shall comply with existing FDOT web standards. These support services will be performed in close coordination with District 3 GIS Project Manager and Office of Information Technology (OIT) staff.***

***All design efforts shall be based on deploying "open architecture" subsystems, while remaining fully compatible with previous designs (as applicable) and the FDOT ITS Specifications. All ITS field devices and support systems shall be designed and located outside of the clear zone, or behind protective barrier, within the right of way. This includes cabinets, poles, and support hardware. Utility conflicts shall be identified and resolved during the design phase. The location of design elements will be coordinated with the District Landscape Architect to optimize landscape opportunities. The design shall minimize theft and vandalism. The CONSULTANT shall include in the design vandal resistant mechanisms to minimize theft. The CONSULTANT shall provide additional redundant power and communications systems to minimize system downtime due to vandalism.***

***The CONSULTANT shall design the project subsystems such that they will be monitored and controlled from the FDOT's TMC facilities. The CONSULTANT shall ensure that all ITS field devices and ancillary components comply with the FDOT's Approved Product List (APL) / Qualified Product List (QPL) and the existing list of devices and components supported within the SunGuide software or other specified software, unless otherwise approved by the DEPARTMENT.***

***The CONSULTANT shall include in the design any required upgrade to the TMC central hardware, equipment racks, and equipment wiring, as directed by the FDOT project manager, to make the subsystems fully operations from the TMC facilities.***

***For projects with existing ITS, the CONSULTANT shall include in the design any required upgrade to existing ITS equipment to meet the latest FDOT standards, NEC requirements or as directed by the FDOT project manager and to make the***

***subsystems fully operations from the TMC facilities.***

***ITS coordination with Landscape Architecture shall include both underground conflicts and above-ground impacts to existing and/or proposed Landscaping. The CONSULTANT shall closely coordinate with the Landscape Architect to ensure that all conflicts are identified, addressed and mitigated in the Contract Documents.***

**2.17 Geotechnical (Activity 35)**

***Each assigned project, (Task Work Order), will identify the geotechnical investigation, testing and analyses and design elements applicable to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, geotechnical elements are to be in accordance with section thirty-five (35) of this document.***

***If artesian conditions are likely to be present within the limits of an assigned project, the Geotechnical CONSULTANT shall be prepared to completely seal the bore holes where the artesian conditions exist. The DEPARTMENT's Geotechnical Engineer shall be notified if and when artesian conditions are encountered.***

**2.18 3D Modeling (Activity 36)**

***Each assigned project, (Task Work Order), will identify the 3D modeling services to be provided by the CONSULTANT and/or the DEPARTMENT. Unless otherwise noted, 3D modeling elements are to be in accordance with section thirty-six (36) of this document.***

**2.19 Project Schedule**

Within ten (10) days after the Notice-To-Proceed ***for each assigned project (Task Work Order)***, and prior to the CONSULTANT beginning work, the CONSULTANT shall provide a detailed ***Critical Path Method (CPM)*** project schedule. ***The*** DEPARTMENT and CONSULTANT scheduled activities ***are*** required to meet the current DEPARTMENT Production Date. ***The project schedule shall include the following: project FPID and project description, FDOT PSM standard activity codes and description for all activities, original duration, activity start date, activity finish date, activity percent complete, activity predecessor(s) and successor(s). The schedule shall be based upon the durations and schedule negotiated during the project staff hour negotiations process.*** For the purpose of scheduling, the CONSULTANT shall allow for a ***three (3)*** week review time for each phase review and other submittals as appropriate.

The schedule shall indicate, ***at a minimum, proposed dates for Phase I, II, III, and IV plans and all other appropriate milestones and*** required submittals.

Periodically, throughout the life of the contract, the project schedule shall be reviewed and, with the approval of the DEPARTMENT, adjusted as necessary to incorporate changes in the Scope of Services and progress to date.

The approved ***monthly updated project*** schedule and schedule status report, shall be submitted with the monthly progress report ***to the DEPARTMENT's Design Project Manager***. ***The CONSULTANT will also be required to make monthly schedule updates for tasks assigned to the CONSULTANT in FDOT Project Suite Enterprise Edition (PSEE). Schedule updates are due the last Friday of each month.***

***Initial and revised*** schedule***s*** shall be submitted ***electronically in *.pdf, Word, or Excel*** format.

***Additional information, the PSEE link, and schedule update training can be found at http://www.fdot.gov/designsupport/Districts/D3/default.shtm .***

**2.20 Submittals**

The CONSULTANT shall furnish construction contract documents as required by the DEPARTMENT to adequately control, coordinate, and approve the work concepts. The CONSULTANT shall distribute submittals as directed by the DEPARTMENT.

***The anticipated submittal requirements for the assigned projects include the listed items below; however, this list of items may not be all inclusive based on project needs. This summation of submittal components will be used for estimating purposes. The DEPARTMENT's Design Project Manager will determine the specific number of phase review submittals and submittal requirements for each project.***

***For any Phase Submittal, the CONSULTANT must have the QC marked-up plans available for the DEPARTMENT's review upon request.***

***The DEPARTMENT's Electronic Review and Comment (ERC) system will be used for project reviews. Upon Notice to Proceed, the DEPARTMENT's Design Project Manager will coordinate with the CONSULTANT to provide the required access into the ERC system***.

***Phase Submittal Delivery: The delivery will include ONLY the submittal components (not the entire project directory and files). The delivery will be transmitted to the DEPARTMENT's Design Project Manager via ftp site, FTA, or other electronic file storage media and will include all construction plans components (roadway, signing & pavement marking, signalization, etc.) in *.pdf format, as well as the other submittal components described below for each submittal. The CONSULTANT shall coordinate with the DEPARTMENT's Design Project Manager to determine whether hard copy sets of plans or CDs/DVDs are required at any or all phase submittals. The CONSULTANT shall provide a *.kmz file of the project with each submittal. The *.kmz file needs to include the layers necessary to compare proposed construction features with the existing utilities as well as the limits of construction (LOC) and right-of-way (R/W).***

***PRIOR TO PHASE I SUBMITTAL:***

***Access Management Study (if applicable): The CONSULTANT shall submit one (1) electronic copy of the Access Management Study (see Sections 2.1 and 4.6) to the DEPARTMENT's Design Project Manager for review with FDOT Management for possible inclusion. This submittal must occur well in advance of the Phase I submittal date to allow time for review and consideration by the DEPARTMENT. Once approved, the CONSULTANT shall transmit a digitally sealed copy to the DEPARTMENT's Design Project Manager.***

***Quality Assurance/ Quality Control (QA/QC) Plan: The CONSULTANT shall submit their QA/QC Plan that will be used during the design of this project to the DEPARTMENT's Design Project Manager for reference within 20 (twenty) calendar days of the written Notice to Proceed. As a minimum, the QA/QC Plan shall include the details of all plan review processes to be utilized and sufficient file documentation to show that the QA/QC plan has been followed. See Section 3.0 (Project Common Tasks).***

***Alignment Submittals: Centerline/Baseline of Survey alignment submittals shall be submitted to the District Survey Office for approval and copies shall be submitted to the DEPARTMENT's Design Project Manager, D3 R/W Mapping Office, and the Prime CONSULTANT.***

***The Prime CONSULTANT shall wait for approval from the District Survey Office before utilizing the alignment for design purposes.***

***Survey Submittals: The Survey Subconsultant shall transmit their submittals to the District 3 Survey Office as well as the Prime CONSULTANT. The Survey Subconsultant shall copy the DEPARTMENT's Design Project Manager on all submittal correspondence. These survey submittals are to be made prior to the phase I, II, III, and IV plans submittals.***

***UAO Identification / Sunshine 811 "Design" Ticket: A copy of the Sunshine 811 "design" ticket listing all utility owners within the project limits shall be transmitted to the Design Project Manager and the Area Utility Manager at the onset of the design survey effort. The ticket shall be included with all phase submittals. See Section 7.2 for additional information regarding this requirement.***

***Miscellaneous Design/ Production Document Submittals: The CONSULTANT shall submit to the DEPARTMENT for review, and receive concurrence for, the Initial Project Schedule, the Community Awareness Plan, the Typical Section Package, Pavement Design (if applicable), Design Variations and/or Exceptions (if applicable), and other documents as required by the FDOT Design Manual (FDM) and the Scope of Services.***

***PHASE I:***

***The CONSULTANT shall submit to the DEPARTMENT's Design Project Manager for distribution (when applicable):***

- ***one (1) electronic copy of the Plans,***
- ***one (1) electronic copy of the QC Marked-up Plans,***
- ***one (1) electronic copy of the Preliminary Bridge Hydraulic Report (BHR)***
- ***one (1) electronic copy of the Preliminary Bridge Development Report (BDR)***
- ***one (1) electronic copy of the Preliminary Pond Siting Report (PSR)***
- ***one (1) signed electronic copy of the Bridge Project Questionnaire***

***The submittal shall, at a minimum, include *.pdf files of the components listed above, as well as the Project-DOCUMENTATION.zip folder (see FDM 111.7), *.kmz file of the project, ADA Survey Report (if applicable), and Sunshine 811 "design" ticket.***

***Along with the Phase I plans submittal, the CONSULTANT shall submit the construction cost estimate using the DEPARTMENT's Long Range Estimating System (L.R.E.). The District Preliminary Estimates Office will provide the CONSULTANT with a version of the L.R.E. in the system for their use.***

***For projects in Escambia County, the CONSULTANT shall submit plans to the Escambia County local government designated contact for a three-week review. See Section 3.1.2 of this document for details regarding Local Government Involvement.***

***The CONSULTANT shall resubmit electronic copies of the BHR and BDR as required to address the DEPARTMENT's PHASE I review comments and concerns. Approval of the BHR by the District Drainage Engineer and BDR by the District Structures Engineer DEPARTMENT will be required prior to making the PHASE II submittal.***

***Following the PHASE I review and prior to the PHASE II submittal, the District Survey Office requests that the prime CONSULTANTS provide the Survey SubConsultants with the plans and allow time for a review to check the survey/ construction layout, alignments, control information (including R/W control if applicable), curve data, layout information, etc.***

***For projects with R/W acquisition, as early as possible, the CONSULTANT shall provide map(s) or plan sheets reflecting the requirements for additional right-of-way. This effort is described in Section 29.7.***

***PHASE II:***

***The CONSULTANT shall submit to the DEPARTMENT's Design Project Manager for distribution (when applicable):***

- ***one (1) electronic copy of the Plans,***
- ***one (1) electronic copy of the QC Marked-up Plans,***

- ***one (1) electronic copy of any Technical Special Provision***
- ***one (1) electronic copy of the No Passing Zone Study***
- ***one (1) electronic copy of the Preliminary Lighting Design Analysis Report***
- ***one (1) audible and vibratory markings recommendation (see Section 19.10)***
- ***one (1) hard copy of the offsite detour approval letter for signature (if required)***
- ***one (1) electronic copy of each completed Structure Number Request Form necessary for any new structure type (mast arms (one per intersection), high mast light poles, sign structures, and/or bridges). Along with the form, the CONSULTANT shall submit applicable plan and elevation sheets and a project location map.***
- ***one (1) signed and sealed electronic copy of the Approved Bridge Hydraulic Report (BHR)***
- ***one (1) digitally sealed electronic copy of the Approved Bridge Development Report (BDR)***
- ***one (1) digitally sealed electronic copy of the Approved Pond Siting Report (PSR)***

***The submittal shall, at a minimum, include *.pdf files of the components listed above, as well as the Project-DOCUMENTATION.zip folder (see FDM 111.7), *.kmz file of the project, Sunshine 811 "design" ticket, Utility Conflict Matrix, ADA Survey Report (if applicable), and a scanned copy of the Constructability Phase Review Checklist (per the Construction Project Administration Manual (CPAM)).***

***Along with the Phase II plans submittal, the CONSULTANT shall submit the construction cost estimate using the DEPARTMENT's Long Range Estimating System (L.R.E.). The District Preliminary Estimates Office will provide the CONSULTANT with a version of the L.R.E. in the system for their use.***

***The CONSULTANT shall submit plans to each of the affected local government(s) designated contact for a three-week review. See Section 3.1.2 of this document for details regarding Local Government Involvement.***

***For projects with maintenance maps by CONSULTANT, the CONSULTANT shall submit the preliminary Maintenance Maps to the DEPARTMENT's Design Project Manager.***

***For projects with R/W acquisition, as early as possible, the CONSULTANT shall provide the DEPARTMENT's Design Project Manager with the Preliminary R/W Requirements for review and approval. If the CONSULTANT is responsible for preparing the R/W Maps for the project, the preliminary maps are to also be submitted at this time for review.***

***If an assigned project has a Temporary Traffic Control Plan Level II or greater, the CONSULTANT shall be prepared to provide materials for and participate in a Temporary Traffic Control Plan (TTCP) Workshop. The DEPARTMENT will submit the project's Temporary Traffic Control Plans for an external peer review at Phase II. Following this review, the DEPARTMENT's Design Project Manager will schedule the TTCP Workshop. See Sections 4.10 and 4.22.***

***<u>PHASE III</u>:***

***The CONSULTANT shall submit to the DEPARTMENT's Design Project Manager for distribution (when applicable):***

- ***one (1) electronic copy of the Plans,***
- ***one (1) electronic copy of the QC Marked-up Plans,***
- ***one (1) electronic copy of any Technical Special Provision (if applicable)***
- ***one (1) electronic copy of the CONSULTANT's Construction Cost Estimate,***
- ***one (1) electronic copy of the CONSULTANT's Contract Time Estimate,***
- ***one (1) electronic copy of the Revised Lighting Design Analysis Report***
- ***one (1) electronic copy of each completed Structure Number Request Form necessary for any new structure type (mast arms (one per intersection), high mast light poles, sign structures, and/or bridges). Along with the form, the CONSULTANT shall submit applicable plan and elevation sheets and a project location map.***
- ***one (1) electronic copy of the CONSULTANT's Utility Schedule Report (see Section 7.10),***
- ***one (1) electronic copy of the Special Detour Quantity Worksheet (if applicable)***
- ***one (1) digitally sealed electronic copy of the Bridge Load Ratings (with output data) in accordance with the FDOT Load Rating Manual***
- ***one (1) electronic copy of the Geotechnical Report***

***The submittal shall, at a minimum, include *.pdf files of the components listed above, as well as the Project-DOCUMENTATION.zip folder (see FDM 111.7), *.kmz file of the project, Sunshine 811 "<u>design</u>" ticket, Utility Conflict Matrix, ADA Survey Report (if applicable), and a scanned copy of the Constructability Phase Review Checklist (per the Construction Project Administration Manual (CPAM)).***

***The CONSULTANT shall submit plans to each of the affected local government(s) designated contact for a three-week review. See Section 3.1.2 of this document for details regarding Local Government Involvement.***

***<u>PHASE IV</u>:***

***The CONSULTANT shall submit to the DEPARTMENT's Design Project***

***Manager for distribution (when applicable):***

- ***one (1) electronic copy of the Plans,***
- ***one (1) electronic copy of the QC Marked-up Plans,***
- ***one (1) electronic copy of the CONSULTANT's Construction Cost Estimate,***
- ***one (1) electronic copy of the CONSULTANT's Contract Time Estimate,***
- ***one (1) electronic copy of the Lighting Design Analysis Report***
- ***one (1) electronic copy of the CONSULTANT's Utility Schedule Report (see Section 7.10),***
- ***one (1) electronic copy of the Special Detour Quantity Worksheet***
- ***one (1) electronic copy of the Geotechnical Report***
- ***one (1) digitally sealed electronic copy of the Bridge Load Ratings (with output data) in accordance with the FDOT Load Rating Manual if any design changes have occurred that will affect the ratings since the previous submittal***

***The submittal shall, at a minimum, include *.pdf files of the components listed above, as well as the Project-DOCUMENTATION.zip folder (see FDM 111.7), *.kmz file of the project, Sunshine 811 "design" ticket, Utility Conflict Matrix, BHR, BDR, ADA Survey Report (if applicable), and a scanned copy of the Constructability Phase Review Checklist (per the Construction Project Administration Manual (CPAM)).***

***SUBMITTAL FOR "THE SHELF":***

***The CONSULTANT must submit a District 3 Change Memo to the District Preliminary Estimates Office to have Project Preconstruction (PrP) unlocked if changes are made following the PHASE IV submittal that affect the pay-items or quantities in PrP. A copy of the District 3 Change Memo can be obtained from the DEPARTMENT's Design Project Manager or the District Preliminary Estimates Office.***

***Upon addressing the PHASE IV review comments, the CONSULTANT shall submit to the DEPARTMENT's Design Project Manager the following in an electronic format via ftp site, FTA, or other electronic file storage media (when applicable):***

- ***PHASE IV Plans,***
- ***PHASE IV QC Marked-up Plans,***
- ***Project-DOCUMENTATION.zip folder,***
- ***Engineer's Construction Cost Estimate,***
- ***CONSULTANT's Contract Time Estimate,***
- ****.kmz file of the project,***
- ***Sunshine 811 "design" ticket,***

- ***Utility Conflict Matrix,***
- ***Utility Schedule Report,***
- ***Special Detour Quantity Worksheet,***
- ***Geotechnical Reports,***
- ***BHR,***
- ***BDR,***
- ***ADA Survey Report,***
- ***Constructability Phase Review Checklist***

***The CONSULTANT shall transmit the applicable electronic project files to the DEPARTMENT's Area Utility Manager.***

***<u>PHASE IV RE-SUBMITTAL</u>:***

***If the project spends one (1) year or more "on the shelf" and/or substantial changes have been made during Plans Update to the plans, pay items, or quantities after the Phase IV review, the CONSULTANT shall prepare a second Phase IV submittal. This submittal will include the requirements listed for Phase IV. This submittal will be made well in advance of the Final Submittal to the DEPARTMENT's Plans Processing Group. This will allow time to address comments in advance of the Final Submittal.***

***The DEPARTMENT's Design Project Manager will determine whether the Phase IV re-submittal will include a distribution to the local governments. See Section 3.1.2 of this document for details regarding Local Government Involvement.***

***The CONSULTANT must submit a District 3 Change Memo to the District Preliminary Estimates Office to have PrP unlocked if changes are made during Plans Update that affect the pay-items or quantities in PrP. A copy of the District 3 Change Memo can be obtained from the DEPARTMENT's Design Project Manager or the District Preliminary Estimates Office.***

***The CONSULTANT must submit an electronic copy of the Plans Update Memo to describe in general terms the changes made to each sheet since the project was "shelved". A copy of the Plans Update Memo can be obtained from the DEPARTMENT's Design Project Manager.***

***Any design changes affecting utilities that occur after the PHASE IV or PHASE IV Resubmittal must be coordinated with the DEPARTMENT's Design Project Manager and submitted to the DEPARTMENT's Area Utility Manager so that Utility Work Schedules can be updated.***

***The effort for preparing a PHASE IV Re-Submittal will be negotiated as a part of the Plans Update Services. See Section 3.7 for more information regarding Plans Update.***

***<u>FINAL PLANS SUBMITTAL TO PLANS PROCESSING</u>:***

***This submittal will occur upon addressing PHASE IV (or PHASE IV RE-SUBMITTAL) comments or following the Plans Update phase and less than one (1) year spent "on the shelf".***

***If changes are made to the plans after the PHASE IV review that affect the pay-items or quantities in PrP, the CONSULTANT must submit a District 3 Change Memo to the District Preliminary Estimates Office to have PrP unlocked. A copy of the District 3 Change Memo can be obtained from the DEPARTMENT's Design Project Manager or the District Preliminary Estimates Office.***

***The CONSULTANT must submit an electronic copy of the Plans Update Memo to describe in general terms the changes made to each sheet since the project was "shelved". A copy of the Plans Update Memo can be obtained from the DEPARTMENT's Design Project Manager.***

***<u>Final Project Submittal to ERC</u>: The CONSULTANT shall submit the following to the DEPARTMENT's Design Project Manager via ftp site, FTA, or other electronic file storage media to post to ERC for the District's Plans Processing Group's review:***

- ***electronic *.pdf copy of each component of the final plans. The plans must be electronically sealed using the Digital Delivery method for the second and subsequent submittals. Not the first.***
- ***a complete Specifications Package including any Technical Special Provisions and/or incentive/disincentive cost analyses and backup documentation (when necessary)***
- ***the Project-DOCUMENTATION.zip folder***
- ***the Project-CADD.zip folder with all project design files***
- ***the Compliance Certification Checklist Report. This report shall be signed by the Engineer of Record to certify that all electronic deliverables are complete, in the proper format, and all plans and specifications are signed and sealed with the same program.***

***Any design changes since the previous submittal affecting utilities must be coordinated with the DEPARTMENT's Design Project Manager and submitted to the DEPARTMENT's Area Utility Manager so that Utility Work Schedules can be updated.***

***The CONSULTANT will expeditiously address the comments received in ERC and be prepared to resubmit the final plans package once the review period in ERC is complete. A minimum of two (2) complete reviews using the ERC system will occur at this juncture, followed by subsequent Final Project CD/DVD submittals as necessary.***

***<u>Final Project Submittal</u>: The CONSULTANT shall submit the following to the DEPARTMENT's Design Project Manager via ftp site, FTA, or other electronic***

***file storage media for the District's Plans Processing Group's review once the ERC reviews are complete:***

- ***final plans electronically sealed using the Digital Delivery method***
- ***a complete Specifications Package including any Technical Special Provisions and/or incentive/disincentive cost analyses and backup documentation (when necessary)***
- ***the Project-DOCUMENTATION.zip folder***
- ***the Project-CADD.zip folder with all project design files***
- ***the Compliance Certification Checklist Report. This report shall be signed by the Engineer of Record to certify that all electronic deliverables are complete, in the proper format, and all plans and specifications are signed and sealed with the same program.***
- ***all project data and its location noted in the project journal.***
- ***electronic copy of any modeling software utilized for drainage design***

***Upon addressing all comments received during the Final Plans Processing review, the CONSULTANT shall transmit electronic project files to the DEPARTMENT's Area Utility Manager as described in the requirements above.***

***Once all electronic project files have been finalized, the DEPARTMENT's Design Project Manager shall upload the Project-DOCUMENTATION.zip folder to Electronic Document Management System (EDMS) or Project Suite Enterprise Edition (PSEE). See FDM 111.7 for guidance on the organization and delivery of Project Documentation.***

***Original survey field books will be submitted to the District Survey Office as well as all other applicable deliverables required by the District's Survey CONSULTANT Checklist.***

**2.21 Provisions for Work**

***All work shall be prepared with English units in accordance with the latest editions of standards and requirements utilized by the DEPARTMENT which include, but are not limited to, publications such as:***

- General
  - Title 29, Part 1910, Standard 1910.1001, Code of Federal Regulations (29 C.F.R. 1910.1001) – Asbestos Standard for Industry, U.S. Occupational Safety and Health Administration (OSHA)
  - 29 C.F.R. 1926.1101 – Asbestos Standard for Construction, OSHA
  - 40 C.F.R. 61, Subpart M - National Emission Standard for Hazardous Air Pollutants (NESHAP), Environmental Protection Agency (EPA)
  - 40 C.F.R. 763, Subpart E – Asbestos-Containing Materials in Schools, EPA
  - 40 C.F.R. 763, Subpart G – Asbestos Worker Protection, EPA

- Americans with Disabilities Act (ADA) Standards for Accessible Design
- AASHTO – A Policy on Design Standards Interstate System
- AASHTO – Roadside Design Guide
- AASHTO – Roadway Lighting Design Guide
- AASHTO – A Policy for Geometric Design of Highways and Streets
- AASHTO – Highway Safety Manual
- Rule Chapter 5J-17, Florida Administrative Code (F.A.C.), Standards of Practice for Professional Surveyors and Mappers
- Chapter 469, Florida Statutes (F.S.) – Asbestos Abatement
- Rule Chapter 62-257, F.A.C., Asbestos Program
- Rule Chapter 62-302, F.A.C., Surface Water Quality Standards
- Code of Federal Regulations (C.F.R.)
- Florida Administrative Codes (F.A.C.)
- Chapters 20, 120, 215, 455, Florida Statutes (F.S.) – Florida Department of Business & Professional Regulations Rules
- Florida Department of Environmental Protection Rules
- FDOT Basis of Estimates Manual
- FDOT Computer Aided Design and Drafting (CADD) Manual
- FDOT Standard Plans
- FDOT Flexible Pavement Design Manual
- FDOT - Florida Roundabout Guide
- FDOT Handbook for Preparation of Specifications Package
- FDOT Instructions for Design Standards
- FDOT Instructions for Structures Related Design Standards
- FDOT Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (“Florida Greenbook”)
- FDOT Materials Manual
- FDOT Pavement Type Selection Manual
- FDOT Design Manual
- FDOT Procedures and Policies
- FDOT Procurement Procedure 001-375-030, Compensation for Consultant Travel Time on Professional Services Agreements
- FDOT Project Development and Environmental Manual
- FDOT Project Traffic Forecasting Handbook
- FDOT Public Involvement Handbook
- FDOT Rigid Pavement Design Manual
- FDOT Standard Specifications for Road and Bridge Construction
- FDOT Utility Accommodation Manual
- Manual on Speed Zoning for Highways, Roads, and Streets in Florida
- Federal Highway Administration (FHWA) - Manual on Uniform Traffic Control Devices (MUTCD)
- FHWA – National Cooperative Highway Research Program (NCHRP) Report 672, Roundabouts: An Informational Guide

- FHWA Roadway Construction Noise Model (RCNM) and Guideline Handbook
- Florida Fish and Wildlife Conservation Commission - Standard Manatee Construction Conditions 2005
- Florida Statutes (F.S.)
- Florida's Level of Service Standards and Guidelines Manual for Planning
- Model Guide Specifications – Asbestos Abatement and Management in Buildings, National Institute for Building Sciences (NIBS)
- Quality Assurance Guidelines
- Safety Standards
- Any special instructions from the DEPARTMENT
- ***FDOT Soils and Foundation Handbook***

- Roadway
  - FDOT – Florida Intersection Design Guide
  - FDOT - Project Traffic Forecasting Handbook
  - FDOT - Quality/Level of Service Handbook
  - Florida's Level of Service Standards and Highway Capacity Analysis for the SHS
  - Transportation Research Board (TRB) - Highway Capacity Manual
- Permits
  - Chapter 373, F.S. – Water Resources
  - US Fish and Wildlife Service Endangered Species Programs
  - Florida Fish and Wildlife Conservation Commission Protected Wildlife Permits
  - Bridge Permit Application Guide, COMDTPUB P16591.3C
  - Building Permit
  - ***US Army Corps of Engineers, 33 CFR 325.1 (d)***
- Drainage
  - FDOT Bridge Hydraulics Handbook
  - FDOT Culvert Handbook
  - FDOT Drainage Manual
  - FDOT Erosion and Sediment Control Manual
  - FDOT Exfiltration Handbook
  - FDOT Hydrology Handbook
  - FDOT Open Channel Handbook
  - FDOT Optional Pipe Materials Handbook
  - FDOT Storm Drain Handbook
  - FDOT Stormwater Management Facility Handbook
  - FDOT Temporary Drainage Handbook
  - FDOT Drainage Connection Permit Handbook
  - FDOT Bridge Scour Manual

- Survey and Mapping
  - ***District 3 Surveying Guidelines***
  - ***Survey Safety Handbook***
  - ***Minimum Technical Standards for Surveying and Mapping Rule 5J-17***
  - All applicable Florida Statutes and Administrative Codes
  - Applicable Rules, Guidelines Codes and authorities of other Municipal, County, State and Federal Agencies.
  - FDOT Aerial Surveying Standards for Transportation Projects Topic 550-020-002
  - FDOT Right of Way Mapping Handbook
  - FDOT Surveying Procedure Topic 550-030-101
  - Florida Department of Transportation Right of Way Procedures Manual
  - Florida Department of Transportation Surveying Handbook
  - Right of Way Mapping Procedure 550-030-015
  - ***All other applicable Department procedures, handbooks, and manuals***
- Traffic Engineering and Operations and ITS
  - AASHTO - An Information Guide for Highway Lighting
  - AASHTO - Guide for Development of Bicycle Facilities
  - FHWA Standard Highway Signs Manual
  - FDOT Manual on Uniform Traffic Studies (MUTS)
  - FDOT Median Handbook
  - FDOT Traffic Engineering Manual
  - Minimum Specifications for Traffic Control Signal Devices
  - National Electric Safety Code
  - National Electrical Code
- Florida's Turnpike Enterprise
  - Florida's Turnpike Plans Preparation and Practices Handbook (TPPPH)
  - Florida's Turnpike Lane Closure Policy
  - Florida's Turnpike Drainage Manual Supplement
  - Rigid Pavement Design Guide for Toll Locations with Electronic Toll Collection
  - Flexible Pavement Design Guide for Toll Locations with Electronic Toll Collection
  - Florida's Turnpike General Tolling Requirements (GTR)
  - Additional Florida's Turnpike Enterprise standards, guides, and policies for design and construction can be found on the FTE Design Website: http://design.floridasturnpike.com
- Traffic Monitoring
  - American Institute of Steel Construction (AISC) Manual of Steel Construction, referred to as "AISC Specifications"

- American National Standards Institute (ANSI) RP-8-00 Recommended Practice for Roadway Lighting
- AASHTO AWS D1.1/ANSI Structural Welding Code – Steel
- AASHTO D1.5/AWS D1.5 Bridge Welding Code
- FHWA Traffic Detector Handbook
- FDOT General Interest Roadway Data Procedure
- FHWA Traffic Monitoring Guide
- FDOT's Traffic/Polling Equipment Procedures

- Structures
  - AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications and Interims
  - AASHTO LRFD Movable Highway Bridge Design Specifications and Interims
  - AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, and Interims.
  - AASHTO/-AWS-D1. 5M/D1.5: An American National Standard Bridge Welding Code
  - AASHTO Guide Specifications for Structural Design of Sound Barriers
  - AASHTO Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges
  - FDOT Bridge Load Rating Manual
  - FDOT Structures Manual
  - FDOT Structures Design Bulletins (available on FDOT Structures web site only)

- Geotechnical
  - FHWA Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Specifications
  - Manual of Florida Sampling and Testing Methods
  - Soils and Foundation Handbook

- Landscape Architecture
  - Florida Department of Agriculture and Consumer Services Grades and Standards for Nursery Plants

- Architectural
  - Building Codes
  - Florida Building Code:
    - Building
    - Fuel Gas
    - Mechanical
    - Plumbing

- Existing Building

- Florida Accessibility Code for Building Construction
- Rule Chapter 60D, F.A.C., Division of Building Construction
- Chapter 553, F.S. – Building Construction Standards
- ANSI A117.1 2003 Accessible and Usable Building and Facilities
- Titles II and III, Americans With Disabilities Act (ADA), Public Law 101-336; and the ADA Accessibility Guidelines (ADAAG)

- Architectural – Fire Codes and Rules

  - National Fire Protection Association (NFPA) - Life Safety Code
  - NFPA 70 - National Electrical Code
  - NFPA 101 - Life Safety Code
  - NFPA 10 - Standard for Portable Fire Extinguishers
  - NFPA 11 - Standard for Low-Expansion Foam Systems
  - NFPA 11A - Standard for High- and Medium-Expansion Foam Systems
  - NFPA 12 - Standard for Carbon Dioxide Extinguishing Systems
  - NFPA 13 - Installation of Sprinkler Systems
  - NFPA 30 - Flammable and Combustible Liquids Code
  - NFPA 54 - National Gas Fuel Code
  - NFPA 58 - LP-Gas Code
  - Florida Fire Prevention Code as adopted by the State Fire Marshal – Consult with the Florida State Fire Marshal's office for other frequently used codes.

- Architectural – Extinguishing Systems

  - NFPA 10 - Fire Extinguishers
  - NFPA 13 - Sprinkler
  - NFPA 14 - Standpipe and Hose System
  - NFPA 17 - Dry Chemical
  - NFPA 20 - Centrifugal Fire Pump
  - NFPA 24 - Private Fire Service Mains
  - NFPA 200 - Standard on Clean Agent Fire Extinguishing Systems

- Architectural – Detection and Fire Alarm Systems

  - NFPA 70 - Electrical Code
  - NFPA 72 - Standard for the Installation, Maintenance and Use of Local Protective Signaling Systems
  - NFPA 72E - Automatic Fire Detectors
  - NFPA 72G - Installation, Maintenance, and Use of Notification Appliances
  - NFPA 72H -Testing Procedures for Remote Station and Proprietary Systems
  - NFPA 74 - Household Fire Warning Equipment
  - NFPA 75 - Protection of Electronic Computer Equipment

- Architectural – Mechanical Systems

- NFPA 90A - Air Conditioning and Ventilating Systems
- NFPA 92A - Smoke Control Systems
- NFPA 96 - Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment
- NFPA 204M - Smoke and Heating Venting

- Architectural – Miscellaneous Systems
  - NFPA 45 - Laboratories Using Chemicals
  - NFPA 80 - Fire Doors and Windows
  - NFPA 88A - Parking Structures
  - NFPA 105- Smoke and Draft-control Door Assemblies
  - NFPA 110 - Emergency and Standby Power Systems
  - NFPA 220 - Types of Building Construction
  - NFPA 241 - Safeguard Construction, Alteration, and Operations
  - Rule Chapter 69A-47, F.A.C., Uniform Fire Safety For Elevators
  - Rule Chapter 69A-51, F.A.C., Boiler Safety
- Architectural – Energy Conservation
  - Rule Chapter 60D-4, F.A.C., Rules For Construction and Leasing of State Buildings To Insure Energy Conservation
  - Section 255.255, F.S., Life-Cycle Costs
- Architectural – Elevators
  - Rule Chapter 61C-5, F.A.C., Florida Elevator Safety Code
  - ASME A-17.1, Safety Code for Elevators and Escalators
  - Architectural – Floodplain Management Criteria
  - Section 255.25, F.S., Approval Required Prior to Construction or Lease of Buildings
  - Rules of the Federal Emergency Management Agency (FEMA)
- Architectural – Other
  - Rule Chapter 64E-6, F.A.C., Standards for On Site Sewage Disposal Systems (Septic Tanks)
  - Rule Chapter 62-600, F.A.C., Domestic Wastewater Facilities
  - Rule Chapter 62-761, F.A.C., Underground Storage Tank Systems
  - American Concrete Institute
  - American Institute of Architects - Architect’s Handbook of Professional Practice
  - American Society for Testing and Materials - ASTM Standards
  - Brick Institute of America
  - DMS - Standards for Design of State Facilities
  - Florida Concrete Products Association
  - FDOT – ADA/Accessibility Procedure
  - FDOT – Building Code Compliance Procedure

- FDOT – Design Build Procurement and Administration
- LEED (Leadership in Energy and Environmental Design) Green Building Rating System
- National Concrete Masonry Association
- National Electrical Code
- Portland Cement Association - Concrete Masonry Handbook
- United State Green Building Council (USGBC)

**2.22 Services to be Performed by the DEPARTMENT**

When appropriate or available, the DEPARTMENT will provide project data including:

- ***Access for the CONSULTANT to utilize the DEPARTMENT's Information Technology Resources***
- ***Any necessary title searches***
- ***Existing cross-slope data for all RRR projects***
- ***All certifications necessary for project letting***
- ***Building Construction Permit Coordination (Turnpike)***
- ***Design Reports***
- ***Letters of authorization designating the CONSULTANT as an agent of the DEPARTMENT in accordance with F.S. 337.274***
- ***Available traffic and planning data***
- ***All information that may come to the DEPARTMENT pertaining to future improvements***
- ***All approved utility relocations***
- ***Regarding Environmental Permitting Services:***
- ***Landscape Opportunity Plan(s)***
- ***Engineering standards review services***
- ***Previously constructed Highway Beautification or Landscape Construction Plans***
- ***Existing right of way maps***
- ***All future information that may come to the DEPARTMENT during the term of the CONSULTANT's Agreement, which in the opinion of the DEPARTMENT is necessary for the prosecution of the work***
- ***Project utility certification to the DEPARTMENT's Central Office***
- ***All available information in the possession of the DEPARTMENT pertaining to utility companies whose facilities may be affected by the proposed construction***
- ***Phase reviews of plans and engineering documents***
- ***Systems traffic for Projected Design Year, with K, D, and T factors***
- ***Numbers for field books***
- ***All future information that may come to the DEPARTMENT pertaining to subdivision plans so that the CONSULTANT may take advantage of additional areas that can be utilized as part of the existing right of way***
- ***Preliminary Horizontal Network Control***
- ***All Department agreements with Utility Agency Owner (UAO)***
- ***PD&E Documents***

- ***Existing pavement evaluation report for all RRR projects***
    - ***Approval of all contacts with environmental agencies***
    - ***General philosophies and guidelines of the DEPARTMENT to be used in the fulfillment of this contract. Objectives, constraints, budgetary limitations, and time constraints will be completely defined by the Project Manager.***
    - ***Approved Permit Document when available***
    - ***Appropriate signatures on application forms***

## 3 PROJECT COMMON AND PROJECT GENERAL TASKS

**Project Common Tasks**

Project Common Tasks, as listed below, are work efforts that are applicable to many project activities, 4 (Roadway Analysis) through 36 (3D Modeling). These tasks are to be included in the project scope in each applicable activity when the described work is to be performed by the CONSULTANT.

Cost Estimates: The CONSULTANT is responsible for producing a construction cost estimate and reviewing and updating the cost estimate when scope changes occur and/or at milestones of the project. Prior to Phase II plans or completion of quantities, the DEPARTMENT's Long-Range Estimate (LRE) system will be used to produce a conceptual estimate, according to District policy. Once the quantities have been developed (beginning at Phase II plans and no later than Phase III plans) the CONSULTANT shall be responsible for inputting the category information, pay items and quantities into AASHTOWare Project Preconstruction through the use of the DEPARTMENT's Designer Interface.

***Phase I - Projects shall be established in PrP by Phase I (30%). The District Preliminary Estimates Office will create the project(s) in the system upon receiving a copy of the Notice to Proceed for the design contract. The District Preliminary Estimates Office will also create a version in the L.R.E. System for the CONSULTANT's use at Phase I. The CONSULTANT can request access to the assigned L.R.E. through the DEPARTMENT's Design Project Manager. For the Phase I (30%) submittal, the CONSULTANT shall submit the cost estimate using the DEPARTMENT's Long Range Estimating (L.R.E.) system. This estimate will be reviewed by the District Preliminary Estimates Office within the L.R.E. System. The Phase I (30%) L.R.E. shall be complete and ready for review at the time of the plans submittal.***

***Phase II - A Project Summary of Pay Items sheet shall be prepared with Phase II and subsequent plans submittals. The Phase II (60%) submittal shall have all pay items identified with or without quantities. If quantities have not been determined at this point, the CONSULTANT shall load a quantity of "1.0". For the Phase II (60%) submittal, the CONSULTANT shall submit the cost estimate using the DEPARTMENT's Long Range Estimating (L.R.E.) system. This estimate will be reviewed by the District Preliminary Estimates Office within the L.R.E. System. The Phase II (60%) L.R.E. shall be complete and ready for review at the time of the plans submittal.***

***Phases III & IV – At Phase III (90%) the CONSULTANT shall have all quantities loaded into PrP, with only minor changes anticipated at subsequent submittals. Within PrP, the CONSULTANT shall run a Project Edit Report for the project at Phases III and IV just prior to submitting the plans to the DEPARTMENT for review. The "Project Edit Report" lists all pay items loaded in the project (by category) and identifies obsolete pay items in PrP. The complete submittal package, including the CONSULTANT's construction cost estimate, will be provided to the District Preliminary Estimates Office at phases III (90%) and IV (100%). If the project includes a Special Detour, the CONSULTANT shall prepare and submit a Special Detour Quantity Worksheet for submittals beginning at Phase III (90%). The Special Detour Worksheet should be submitted at every subsequent phase submittal and updated if necessary. The above shall be provided for each component set of plans (i.e., Roadway, Bridge, Signing and Marking, etc.).***

Technical Special Provisions: The CONSULTANT shall provide Technical Special Provisions for all items of work not covered by the Standard Specifications for Road and Bridge Construction and the workbook of implemented modifications.

A Technical Special Provision shall not modify the Standard Specifications and implemented modifications in any way.

The Technical Special Provisions shall provide a description of work, materials, equipment and specific requirements, method of measurement and basis of payment. Proposed Technical Special Provisions will be submitted to the District Specifications Office for initial review at the time of the Phase III plans review submission to the DEPARTMENT's Project Manager. This timing will allow for adequate processing time prior to final submittal. The Technical Special Provisions will be reviewed for suitability in accordance with the Handbook for Preparation of Specification Packages. The District Specifications Office will forward the Technical Special Provisions to the District Legal Office for their review and comment. All comments will be returned to the CONSULTANT for correction and resolution. Final Technical Special Provisions shall be digitally signed and sealed in accordance with applicable Florida Statutes.

The CONSULTANT shall contact the appropriate District Specifications Office for details of the current format to be used before starting preparations of Technical Special Provisions.

Modified Special Provisions: The CONSULTANT shall provide Modified Special Provisions as required by the projects. Modified Special Provisions are defined in the Specifications Handbook.

A Modified Special Provision shall not modify the first nine sections of the Standard Specifications and implemented modifications in any way. All modifications to other sections must be justified to the appropriate District and Central Specifications Offices to be included in the project's specifications package.

Field Reviews: The CONSULTANT shall make as many trips to the project site as required

to obtain necessary data for all elements of the project.

Technical Meetings: The CONSULTANT shall attend all technical meetings necessary to execute the Scope of Services of this contract. This includes meetings with DEPARTMENT and/or Agency staff, between disciplines and subconsultants, such as access management meetings, pavement design meetings, local governments, railroads, airports, progress review meetings (phase review), and miscellaneous meetings. The CONSULTANT shall prepare, and submit to the DEPARTMENT's Project Manager for review, the meeting minutes for all meetings attended by them. The meeting minutes are due within five (5) working days of attending the meeting.

Quality Assurance/Quality Control ***(QA/QC)***: It is the intention of the DEPARTMENT that design CONSULTANTS, including their subconsultant(s), are held responsible for their work, including plans review. The purpose of CONSULTANT plan reviews is to ensure that CONSULTANT plans follow the plan preparation procedures outlined in the FDOT Design Manual, that state and federal design criteria are followed with the DEPARTMENT concept, and that the CONSULTANT submittals are complete. All subconsultant document submittals shall be submitted by the subconsultant directly to the CONSULTANT for their independent Quality Assurance/Quality Control review and subsequent submittal to the DEPARTMENT.

It is the CONSULTANT'S responsibility to independently and continually QC their plans and other deliverables. The CONSULTANT should regularly communicate with the DEPARTMENT's Design Project Manager to discuss and resolve issues or solicit opinions from those within designated areas of expertise.

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of all surveys, designs, drawings, specifications and other services furnished by the CONSULTANT and their subconsultant(s) under this contract.

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all maps, design drawings, specifications, and other documentation prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan shall be one specifically designed for this project. The CONSULTANT shall submit a Quality Control Plan for approval within twenty (20) business days of the written Notice to Proceed and it shall be signed by the CONSULTANT's Project Manager and the CONSULTANT QC Manager. The Quality Control Plan shall include the names of the CONSULTANT's staff that will perform the quality control reviews. The Quality Control reviewer shall be a Florida Licensed Professional Engineer fully prequalified under F.A.C. 14-75 in the work type being reviewed. A marked up set of prints from a Quality Control Review indicating the reviewers for each component (structures, roadway, drainage, signals, geotechnical, signing and marking, lighting, landscape, surveys, etc.) and a written resolution of comments on a point-by-point basis will be required, if requested by the

DEPARTMENT, with each phase submittal. The responsible Professional Engineer, Landscape Architect, or Professional Surveyor & Mapper that performed the Quality Control review will sign a statement certifying that the review was conducted and found to meet required specifications.

The CONSULTANT shall, without additional compensation, correct all errors or deficiencies in the designs, maps, drawings, specifications and/or other products and services.

Independent Peer Review: When directed by the DEPARTMENT, a subconsultant may perform Independent Peer Reviews.

***Prior to staffhour negotiations, the CONSULTANT shall coordinate with the DEPARTMENT's Design Project Manager to determine whether*** Independent Peer Reviews ***and/or*** Constructability/Bidability Review***s through this design contract will be*** required on this project. These separate reviews shall be completed by someone who has not worked on the plan component that is being reviewed. These could include, but are not limited to a separate office under the Prime's umbrella, a subconsultant that is qualified in the work group being reviewed, or a CEI. It does not include persons who have knowledge of the day to day design efforts. The Constructability/Bidability Review shall be performed by a person with experience working on Department construction projects (CEI, Contractor, etc.).

The Independent Peer Review for design Phase Plans submittals shall ensure the plans meet the FDM, Standard Plans and FDOT CADD Manual. The Constructability/Bidability Review shall ensure the project can be constructed and paid for as designed. Constructability/Bidability Reviews should be conducted prior to the Phase III and Phase IV submittals, using the Phase Review Checklist (Guidance Document 1-1-A) from the Construction Project Administration Manual (CPAM) as a minimum guideline. The CONSULTANT shall submit this checklist, as well as the "marked-up" set of plans during this review, and review comments and comment responses from any previous Constructability/Bidability reviews. These items will be reviewed by District Design and District Construction.

Supervision: The CONSULTANT shall supervise all technical design activities.

Coordination: The CONSULTANT shall coordinate with all disciplines of the project to produce a final set of construction documents.

**Project General Tasks**

Project General Tasks, described in Sections 3.1 through ***3.13*** below, represent work efforts that are applicable to the project as a whole and not to any one or more specific project activity. The work described in these tasks shall be performed by the CONSULTANT when included in the project scope.

### 3.1 Public Involvement

Public involvement includes communicating to all interested persons, groups, and government organizations information regarding the development of the project. The CONSULTANT shall provide to the DEPARTMENT drafts of all Public Involvement documents (e.g., newsletters, property owner letters, advertisements, etc.) associated with the following tasks for review and approval at least 10 business days prior to printing and / or distribution.

***Each assigned project, (Task Work Order), will identify the necessary Community Awareness Plan (CAP) level.***

***Prior to negotiations, the CONSULTANT shall coordinate with the DEPARTMENT's Design Project Manager and Public Information Director to discuss the specific public involvement activities anticipated for each assigned task***.

### 3.1.1 Community Awareness Plan

Prepare a Community Awareness Plan (CAP) for review and approval by the DEPARTMENT within 30 calendar days after receiving Notice to Proceed. The objective of the plan is to notify local governments, affected property owners, tenants, and the public of the DEPARTMENT'S proposed construction and the anticipated impact of that construction. The CAP shall address timeframes for each review and shall include tentative dates for each public involvement requirement for the project. The CAP will also document all public involvement activities conducted throughout the project's duration. In addition to the benefits of advance notification, the process should allow the DEPARTMENT to resolve controversial issues during the design phase. This item shall be reviewed and updated periodically as directed by the DEPARTMENT throughout the life of the project.

***All projects require the development of a Community Awareness Plan (CAP).***

***Each assigned project, (Task Work Order), will identify the necessary CAP Level and follow the necessary guidelines listed in this section as appropriate.***

### 3.1.2 Notifications

In addition to public involvement data collection, the CONSULTANT shall assist the DEPARTMENT or prepare notifications, flyers, and/or letters to elected officials and other public officials, private property owners, and tenants at intervals during plans production as identified by the DEPARTMENT. All letters and notices shall be reviewed by the ***CONSULTANT*** to ensure that they are addressed to the correct and current public officials.

**PHASE SUBMITTAL NOTIFICATIONS**:

***The CONSULTANT shall prepare an email notification and a distribution list for plans at Phase II, Phase III, and any subsequent Phase IV re-submittal to the office(s) designated by the local government(s) and applicable regional authorities for a three-week review. The email notifications and plans will be distributed by the DEPARTMENT. The need to re-submit Phase IV Plans will depend on the duration of time spent "on the shelf" and the amount of changes that have***

***occurred since the last submittal to the Local Governments at Phase III. See Section 2.20 regarding Phase IV re-submittals. The Phase IV re-submittal to the Local Governments should take place well in advance of the Final Submittal to the District for Plans Processing to allow time to address comments received from the Local Governments.***

***Each comment or request provided by the local government shall be evaluated by the CONSULTANT and discussed with the DEPARTMENT's Design Project Manager. Responses will be prepared by the CONSULTANT for the District Consultant Project Management Engineer's signature. All comments or requests shall be responded to in writing within thirty (30) calendar days of receipt of comments***.

**PRELIMINARY FIELD INVESTIGATION NOTIFICATIONS (*if applicable*)**:

***In advance of any survey or geotechnical investigation activities outside of the FDOT R/W, the CONSULTANT shall prepare a Preliminary Field Investigation Notification to include all properties where R/W impacts are likely to occur. This notification shall be mailed by the CONSULTANT no less than 10 calendar days prior to conducting the field survey or geotechnical investigation***.

***Preliminary Field Investigation Notifications should provide***:

- ***FPID Number***
- ***State Road Number and Local Road Name***
- ***Project Limits***
- ***A Project Map***
- ***Type of Work***
- ***Reference that field surveys and/or geotechnical investigations may be conducted by CONSULTANT representatives of the DEPARTMENT***
- ***DEPARTMENT contact persons***
- ***Reference to the intent to conduct Public Meetings/Workshops in the future***

***These notifications to affected property owners/tenants shall be prepared by the CONSULTANT for the DEPARTMENT's Design Project Manager's signature. Letters for project's managed by GEC Project Managers shall be signed by the District Consultant Project Management Engineer.***

***TARGETED PROJECT NOTIFICATIONS (if applicable):***

***Targeted Project Notifications shall be prepared by the CONSULTANT for all parties affected by particular activities within the subject project's limits (not throughout)***.

***Targeted Email Notifications and Mass Mail-outs shall provide:***

- ***FPID Number***
- ***State Road Number and Local Road Name***
- ***Project Limits***

- ***A Project Map***
- ***Type of Work***
- ***Construction Letting Timeframe (i.e., Spring 20XX, Winter 20XX)***
- ***DEPARTMENT contact persons***

***Targeted Email Notifications to Public Officials:***

- ***Targeted Email Notifications shall be prepared as an email by the CONSULTANT for all pertinent public officials as described in Section 3.1.3. The email notification to the public officials shall be emailed by the DEPARTMENT following the Phase II distribution.***
- ***In addition to the email notification, a flier or tri-fold will be required as an attachment to relay all of the pertinent information described above.***
- ***The CONSULTANT shall submit the draft email notification along with the attachment(s) and distribution list at the designated time in the project schedule. The distribution list shall be an MS Excel file and shall include the name, title, and email address of each intended recipient.***

***Mail-out to Targeted Property Owners:***

- ***A notification letter and/or a project information flier/ tri-fold will be prepared and sent to all property owners, tenants, and business operators adjacent to the specified work activities and as defined in Section 3.1.3. This notification shall be mailed by the CONSULTANT following the Phase II distribution.***

- ***Property owners and tenants within the "targeted limits" can be contacted through mass mailings and/or hand delivered flyers. Letters shall be prepared for the District Consultant Project Management Engineer's signature and shall be on DEPARTMENT letterhead.***

- ***A notification letter will be prepared and sent to property owners, tenants, and business operators where existing, privately owned landscaping/ hardscaping/ signs/ brick pavers/ mailboxes/ etc. are expected to be impacted by construction activities. This notification shall be mailed by the CONSULTANT following the Phase II distribution***.

***For assigned projects with a CAP Level 2,3, or 4, Project Notifications or Public Meeting/Workshop/Hearing Invitations shall be prepared by the CONSULTANT for all parties affected by the subject project.***

***The CONSULTANT shall be aware that certain proposed deviations from access management and median opening spacing standards must be presented to the District Access Management Review Committee (AMRC)(see also Sections 2.1 and 4.6). Access management changes (specifically median crossover closures and modifications) will necessitate a Public Hearing vs. Public Meeting/Workshop when a Public Hearing was NOT conducted during a PD&E phase.***

***Email Notifications and Mass Mail-outs shall provide:***

- ***FPID Number***
- ***State Road Number and Local Road Name***
- ***Project Limits***
- ***A Project Map***
- ***Type of Work***
- ***Construction Letting Timeframe (i.e., Spring 20XX, Winter 20XX)***
- ***DEPARTMENT contact persons***
- ***Meeting/Workshop Date, Time, Location, and Format (if applicable)***
- ***Meeting/Workshop Location Map (if applicable)***

***Email Notification to Public Officials:***

- ***Notifications shall be prepared as an email by the CONSULTANT for all pertinent public officials as described in Section 3.1.3. The email notification to the public officials shall be emailed by the DEPARTMENT no less than 15 calendar days before a public meeting/workshop/hearing or following the Phase II distribution for CAP II projects without a public meeting/workshop/hearing.***

- ***In addition to the email notification, a flier or tri-fold will be required as an attachment to relay all of the pertinent information described above.***

- ***The CONSULTANT shall submit the draft email notification along with the attachment(s) and distribution list at the designated time in the project schedule. The distribution list shall be an MS Excel file and shall include the name, title, and email address of each intended recipient.***

***Mail-out to Property Owners:***

- ***A notification/invitation letter and/or a project information flier/ tri-fold will be prepared and sent to all property owners, tenants, and business operators as defined in Section 3.1.3. This notification shall be mailed by the CONSULTANT no less than 10 calendar days before the meeting/workshop/hearing or following the Phase II distribution for CAP II projects without a public meeting/workshop/hearing.***

- ***Property owners and tenants can be contacted through mass mailings and/or hand delivered flyers. Letters shall be prepared for the District Consultant Project Management Engineer's signature and shall be on DEPARTMENT letterhead.***

- ***A notification letter will be prepared and sent to property owners, tenants, and business operators where existing, privately owned landscaping/ hardscaping/ signs/ brick pavers/ mailboxes/ etc. are expected to be impacted by construction activities. This notification shall be mailed by the CONSULTANT following the Phase II distribution.***

***Media Notification (if applicable, for projects with Public Meetings/Workshops, To Be Prepared By The DEPARTMENT):***

- ***Press releases will be prepared by the District Public Information Office for publishing during the week of Public Information Meetings/Workshops/Hearings. Any press release or advertisement will indicate that the meeting/workshop/hearing is a DEPARTMENT activity and will be coordinated by the CONSULTANT. Two (2) newspaper display advertisements no less than (4"X6") with graphic will be published in the local section, the first shall be 14 calendar days in advance of the meeting/workshop/hearing, and the second will be the day before the meeting/workshop/hearing date. If there is not a daily newspaper in the area, notice will run on publishing day if it falls prior to the meeting/workshop/hearing date.***

- ***In addition, notice of public meetings/workshops/hearings will be posted in the Florida Administrative Register a minimum of 14 calendar days prior.***

- ***The CONSULTANT shall pay the cost of all media notifications.***

- ***For CAP Level 4 projects, (major urban interstate reconstruction), press releases to AAA and the Truckers Association will be necessary***.

***All notification/invitation letters intended for physical mail-out shall be on DEPARTMENT letterhead. The CONSULTANT shall pay postage for the mail-out to property owners and will be responsible for the physical mail-out effort (printing, envelope stuffing, stamping, etc.).***

***The CONSULTANT must review all notices, letters, and attachments for accuracy and spelling and ensure that notices are sent to the person currently holding the public official positions. The CONSULTANT must attempt to affirm the validity of all email addresses submitted for each notification.***

***Examples of any of this correspondence can be made available upon request to the DEPARTMENT's Design Project Manager***.

### 3.1.3 Preparing Mailing Lists

At the beginning of the project, The CONSULTANT shall identify all impacted property owners and tenants (within a minimum of 300 feet of the project corridor) The CONSULTANT shall prepare a mailing list of all such entities and shall update the mailing list as needed during the life of the project.

***PHASE SUBMITTAL NOTIFICATIONS***:

***The distribution list for the phase submittal notifications described in Section 3.1.2 will be submitted to the DEPARTMENT's Design Project Manager at Phase II, Phase III, and any subsequent Phase IV re-submittal. The distribution list shall be an MS Excel file and shall include the name, title, and email address of each***

***intended recipient.***

***Mail-out to Public Officials:***

- ***Public Officials who are to receive notification of projects shall include, (but not be limited to)***:

  ***County***
  - ***County Manager***
  - ***County Public Information Director***
  - ***County Commissioners***
  - ***County Public Works Director***
  - ***County Engineer***

  ***City***
  - ***City Commission***
  - ***Mayor***
  - ***City Manager***
  - ***Engineer / Public Work Director***

  ***Regional***
  - ***Regional Planning Council/ MPO/ TPO/ TPA***
  - ***College Campus Facilities Department***

  ***Regional Authorities (Governor Appointed)***
  - ***Northwest Florida Transportation Corridor Authority (NFTCA)(if applicable – for projects along or intersecting US 98 or alternate US 98 routes)***
  - ***Santa Rosa Bay Bridge Authority (if applicable – for Santa Rosa County projects along or affecting SR 281, SR 30, or SR 8 (I-10) within close proximity to SR 281 and the Garcon Point Bridge)***
  - ***Mid-Bay Bridge Authority (if applicable – for Okaloosa and Walton County projects along or affecting SR 293, SR 30, SR 20, SR 85, or SR 285 within close proximity to SR 293)***

**PRELIMINARY FIELD INVESTIGATION NOTIFICATIONS *(if applicable)***:

***The preliminary field investigation notifications shall be mailed by the CONSULTANT in accordance with the guidance and timeframes provided in Section 3.1.2.***

***The CONSULTANT shall prepare a mailing list to include all properties–where R/W impacts are likely to occur. The CONSULTANT shall utilize Direct Mail Services, Tax Collector Office and/or any other source to identify and obtain the***

***addresses of property owners and business operators along the project. The CONSULTANT is expected to implement delivery receipts and/or certified mail options to ensure that property owners/tenants are notified.***

**TARGETED PROJECT NOTIFICATIONS *(if applicable):***

:

***Targeted Project Notifications shall be prepared by the CONSULTANT for all parties affected by particular activities within the subject project's limits (not throughout).***

***The mailing list shall be prepared by the CONSULTANT to include all affected parties. The mailing list will be submitted along with the notifications to the DEPARTMENT's Design Project Manager for review and approval.***

***Targeted Email Notifications to Public Officials:***

- ***Public Officials who are to receive notification of projects and shall include, (but not be limited to)***:

***Federal/State***

- ***Legislative Delegation/Congress (Federal & State)***
- ***Water Management Districts***
- ***US Post Master***
- ***Florida Highway Patrol (Major & Commander)***
  ****especially if Troop Headquarters is located in municipality***
- ***Military Installations (if within project's proximity)***

***County***

- ***County Manager***
- ***County Public Information Director***
- ***County Commissioners***
- ***County Public Works Director***
- ***County Engineer***
- ***County Emergency Management Director***
- ***Sheriff's Department***
- ***Sheriff's Department Public Information / Public Affairs***
- ***County Airport Director***
- ***County Seaport Director***
- ***County Public Transit System***
- ***County Schools Superintendent***
- ***Transportation Director***
- ***Fire & Rescue Departments***

***City***

- ***City Commission***

- ***Mayor***
- ***City Manager***
- ***Engineer / Public Work Director***
- ***City Police Chief***

***Regional***

- ***Merchants Association***
- ***Chamber of Commerce***
- ***Convention & Visitors Bureau***
- ***Tourist Development Regional Planning Council/ MPO/ TPO/ TPA***
- ***Local Americans with Disabilities Act (ADA)/ Pedestrian Advocacy Groups***
- ***Local Hospitals***
- ***Seaport Authority***
- ***Airport Authority***
- ***Local Colleges/Universities (if within project's proximity)***

***Regional Authorities (Governor Appointed)***

- ***Northwest Florida Transportation Corridor Authority (NFTCA)(if applicable – for projects along or intersecting US 98 or alternate US 98 routes)***
- ***Santa Rosa Bay Bridge Authority (if applicable – for Santa Rosa County projects along or affecting SR 281, SR 30, or SR 8 (I-10) within close proximity to SR 281 and the Garcon Point Bridge)***
- ***Mid-Bay Bridge Authority (if applicable – for Okaloosa and Walton County projects along or affecting SR 293, SR 30, SR 20, SR 85, or SR 285 within close proximity to SR 293)***

***Mail-out to Targeted Property Owners:***

- ***A notification will be written and sent to all property owners, tenants, and business operators whose property, home, or business lies in whole or in part within a minimum of 300 feet of the "targeted limits". In addition, the CONSULTANT must include any businesses or neighborhoods located down side roads that may be impacted by the project. The CONSULTANT shall utilize Direct Mail Services, Tax Collector Office and/or any other source to identify and obtain the address of property owners and business operators along the project.***

- ***A notification letter will be prepared and sent to property owners, tenants, and business operators where existing, privately owned landscaping/ hardscaping/ signs/ brick pavers/ mailboxes/ etc. are expected to be impacted by construction activities. This notification shall***

***be mailed by the CONSULTANT following the Phase II distribution***.

**PROJECT NOTIFICATIONS: HYBRID MEETINGS, VIRTUAL PROJECT UPDATES (VPU), PUBLIC MEETING/WORKSHOP, or HEARING INVITATIONS *(if applicable)*:**

***Project Notifications/ Public Meeting/Workshop/Hearing Invitations shall be prepared by the CONSULTANT in accordance with the guidance and timeframes described in Section 3.1.2.***

***The mailing list shall be prepared by the CONSULTANT to include all affected parties. Media in the project area will also be identified and placed on the mailing list to be used for news releases, advertisements or any concerns. The mailing list will be submitted along with the notifications/invitations to the DEPARTMENT's Design Project Manager for review and approval.***

***Email Notifications/Invitations to Public Officials:***

- ***Public Officials who are to receive notification of projects and public meetings/workshops/hearings shall include, (but not be limited to)***:

  ***Federal/State***
  - ***Legislative Delegation/Congress (Federal & State)***
  - ***Water Management Districts***
  - ***US Post Master***
  - ***Florida Highway Patrol (Major & Commander) *especially if Troop Headquarters is located in municipality***
  - ***Military Installations (if within project's proximity)***

  ***County***
  - ***County Manager***
  - ***County Public Information Director***
  - ***County Commissioners***
  - ***County Public Works Director***
  - ***County Engineer***
  - ***County Emergency Management Director***
  - ***Sheriff's Department***
  - ***Sheriff's Department Public Information / Public Affairs***
  - ***County Airport Director***
  - ***County Seaport Director***
  - ***County Public Transit System***
  - ***County Schools Superintendent***
  - ***Transportation Director***
  - ***Fire & Rescue Departments***

  ***City***

- ***City Commission***
- ***Mayor***
- ***City Manager***
- ***Engineer / Public Work Director***
- ***City Police Chief***

***Regional***

- ***Merchants Association***
- ***Chamber of Commerce***
- ***Convention & Visitors Bureau***
- ***Tourist Development Regional Planning Council/ MPO/ TPO/ TPA***
- ***Local Americans with Disabilities Act (ADA)/ Pedestrian Advocacy Groups***
- ***Local Hospitals***
- ***Seaport Authority***
- ***Airport Authority***
- ***Local Colleges/Universities (if within project's proximity)***

***Regional Authorities (Governor Appointed)***

- ***Northwest Florida Transportation Corridor Authority (NFTCA)(if applicable – for projects along or intersecting US 98 or alternate US 98 routes)***
- ***Santa Rosa Bay Bridge Authority (if applicable – for Santa Rosa County projects along or affecting SR 281, SR 30, or SR 8 (I-10) within close proximity to SR 281 and the Garcon Point Bridge)***
- ***Mid-Bay Bridge Authority (if applicable – for Okaloosa and Walton County projects along or affecting SR 293, SR 30, SR 20, SR 85, or SR 285 within close proximity to SR 293)***

***Mail-out to Property Owners:***

- ***A notification/invitation will be written and sent to all property owners, tenants, and business operators whose property, home, or business lies in whole or in part within a minimum of 300 feet of the centerline of the project. In addition, the CONSULTANT must include any businesses or neighborhoods located down side roads that may be impacted by the project. The CONSULTANT shall utilize Direct Mail Services, Tax Collector Office and/or any other source to identify and obtain the address of property owners and business operators along the project.***

- ***A notification letter will be prepared and sent to property owners, tenants, and business operators where existing, privately owned landscaping/ hardscaping/ signs/ brick pavers/ mailboxes/ etc. are***

***expected to be impacted by construction activities. This notification shall be mailed by the CONSULTANT following the Phase II distribution.***

***Mail-out to Media Outlets: To be conducted by the DEPARTMENT for projects with Meetings.***

### 3.1.4 Median Modification Letters

The CONSULTANT shall prepare a median modification letter to be sent to property owners along the corridor***, where affected by median modifications***. In addition, the CONSULTANT shall prepare a sketch of each proposed median modification for inclusion in the letter. The letters will be ***on DEPARTMENT letterhead and signed by the District Design Engineer.***

***The CONSULTANT shall be aware that certain proposed deviations from access management and median opening spacing standards must be presented to the District Access Management Review Committee (AMRC)(see also Sections 2.1 and 4.6). Access management changes (specifically median crossover closures and modifications) will necessitate a Public Hearing vs. Public Meeting/Workshop when a Public Hearing was NOT conducted during a PD&E phase.***

***The CONSULTANT shall pay postage for these letters and will be responsible for the physical mail-out effort (printing, envelope stuffing, stamping, etc.).***

### 3.1.5 Driveway Modification Letters

The CONSULTANT shall prepare a driveway modification letter to be sent to property owners along the corridor ***where driveway modifications are proposed***. In addition, the CONSULTANT shall prepare a sketch of each proposed driveway modification for inclusion in the letter. ***Driveway modifications will be closely coordinated with and approved by the DEPARTMENT's Design Project Manager.*** The letters will be ***on DEPARTMENT letterhead and signed by the District Design Engineer.***

***The CONSULTANT shall be aware that certain proposed deviations from access management and median opening spacing standards must be presented to the District Access Management Review Committee (AMRC)(see also Sections 2.1 and 4.6).***

***The CONSULTANT shall pay postage for these letters and will be responsible for the physical mail-out effort (printing, envelope stuffing, stamping, etc.)***.

### 3.1.6 Newsletters

***If the project has a CAP LEVEL 3 or 4, The CONSULTANT shall prepare newsletters for distribution to specified affected parties as identified by the DEPARTMENT. The CONSULTANT shall pay postage for these letters and will be responsible for the mail-out preparation effort (printing, envelope stuffing, stamping, etc.). The letters will be sent by the DEPARTMENT***.

### 3.1.7 Renderings and Fly-Throughs

***Each assigned project, (Task Work Order), will identify the rendering and fly through needs to be provided by the CONSULTANT and/or the DEPARTMENT.***

***For an assigned project, the CONSULTANT shall prepare renderings and Fly-throughs for use in public meetings and/or hearings. Development of images produced via 3D virtual models is an acceptable form of rendering. Animations may be required by the DEPARTMENT's Public Information Office***.

### 3.1.8 PowerPoint Presentations

***Each assigned project, (Task Work Order), will identify the PowerPoint Presentation needs to be provided by the CONSULTANT and/or the DEPARTMENT***.

***For an assigned project, the CONSULTANT shall prepare PowerPoint presentations (with voiceover if requested by the DEPARTMENT's Public Information Office) for use in public meetings/hearings.***

### 3.1.9 Public Meeting Preparations

***FOR CAP LEVEL 2 (with MEETING or HEARING), 3, & 4 PROJECTS***:

***Following the Phase II plans submittal, and typically in advance of the Phase III submittal, the CONSULTANT shall assist the DEPARTMENT in scheduling the Public Meeting (FDOT Hybrid Meeting, Virtual Project Update (VPU), Public Information Meeting/Workshop or Hearing). Tuesday and Thursday evenings are preferred. The CONSULTANT shall be aware of and avoid other scheduled FDOT Public Meetings or Hearings. The CONSULTANT shall assist the DEPARTMENT in determining when local government meetings are scheduled (MPO/TPO, County Commission, and/or City Council Meetings) and shall avoid scheduling the FDOT meeting to conflict with the local government meetings***.

The CONSULTANT will investigate potential meeting sites to advise the DEPARTMENT on their suitability. The ***CONSULTANT*** will pay all costs for meeting site ***rentals*** and insurance. No DEPARTMENT meetings will be held on public school system properties. ***In addition, churches and religious facilities are to be considered if no other secular or municipal buildings are available. In accordance with Section 4 of Executive Order 07-126, any hotel or conference center used for hosting an FDOT Public Information Meeting/Workshop must be designated under the FDEP's Green Lodging Program. Prospective sites for the meeting shall be convenient to residents along the corridor and shall be inspected for suitability. Consideration shall be given to capacity, lighting, and other physical characteristics that may influence the selection of the site. The site shall meet ADA standards and the CONSULTANT shall provide signs to indicate the location of the available handicapped accesses.***

***Room size will be based on the number of mailouts. The proposed meeting site shall be presented to the DEPARTMENT for approval prior to the CONSULTANT negotiating use of the site.***

***In preparation for a FDOT Public Information Meeting/Workshop, the CONSULTANT shall provide:***

- ***Project Information/Fact Sheets***
- ***Script or Agenda for any planned presentation (if applicable)***
- ***All necessary graphics and displays (see requirements below)***
- ***Meeting equipment set-up and teardown***
- ***Legal and/or display advertisements***

***In preparation for a FDOT Public Hearing, the CONSULTANT shall provide:***

- ***Materials related to the required presentation (agenda/script, electronic slide presentation or video)***
- ***Project Information/Fact Sheets***
- ***All necessary graphics and displays (see requirements below)***
- ***Meeting equipment set-up and teardown***
- ***Court Reporter***
- ***Legal and/or display advertisements***

***The CONSULTANT shall be aware of all the pertinent requirements for scheduling and conducting Public Hearings as described in the DEPARTMENT's Project Development and Environmental (PD&E) Manual.***

***The CONSULTANT shall prepare all materials, displays, and/or wall graphics for use during the meeting. These include but are not limited to the following***:

- ***Self-addressed comment forms to allow attendees to provide written comments within 10 days after the FDOT Public Information Meeting/Workshop. The DEPARTMENT's Design Project Manager shall be listed as the contact for all comments.***

- ***Sign-in sheets***

- ***At least two (2) foam boards (36"X24") (or a display similar in nature) displaying a typical section. The drawing shall be in color with computer images of automobiles, bicycles, and pedestrians occupying the designated travel areas.***

- ***At least two foam boards (36"X24") (or a display similar in nature) displaying a computer enhance photograph utilizing an existing conditions photo to reflect proposed conditions. For intersection projects, 2 computer-enhanced photographs showing the existing conditions and proposed improvements will be required. "Before and After" depictions of select work elements are encouraged for 3R projects as well to help demonstrate proposed changes to the public.***

- ***Two (2) copies of the project in plan view. The project plan view shall be on (36"X24") foam boards or rollouts (or a display similar in nature). For projects of substantial length, projects can be rolled out on tables or***

***placed on the wall. The photo or roll-outs shall be 1"=50', 1"=100" (or a legible scale) raster drawings, to scale aerial photos, or colored CADD drawings with the following information:***

* ***existing right-of-way lines***
* ***proposed right-of-way lines***
* ***proposed pavement markings (pavement should be black or gray with the correct color of pavement markings (white or yellow)***
* ***existing structures adjacent to the roadway (homes, businesses, etc.)***
* ***proposed driveway and median openings***
* ***proposed ponds designated as wet or dry***
* ***designation of proposed signalized intersections***.

***Displays and other materials prepared for Public Meeting(s) shall NOT depict the CONSULTANT's logo. Displays and materials shall only depict the DEPARTMENT's logo/seal.***

***Mail-out Materials: The CONSULTANT shall be aware that along with the mail-outs described in Section 3.1.3, all the above deliverables intended for mail-out must be submitted to the DEPARTMENT's Design Project Manager well in advance of the mail-out and meeting/workshop to allow time for review, approval, and signatures if necessary.***

***Display Materials: The CONSULTANT shall be aware that all the above deliverables and materials proposed to be displayed at the Public Meeting/Workshop or Public Hearing must be presented to DEPARTMENT staff at a pre-meeting workshop for review and approval in advance of the Public Meeting/Workshop or Public Hearing***.

***GIS Support***: ***For each assigned project, the CONSULTANT will be required to produce an ESRI web based map to display project limits and information to display at FDOT coordinated Public Meeting(s). The CONSULTANT will also be required to utilize the DEPARTMENT's default comment form and web based map to accommodate comments from the public and display them geospatially for the DEPARTMENT to view for project concerns and impacts***.

**3.1.10 Public Meeting Attendance and Follow-up**

***FOR CAP LEVEL 2 (with MEETING), 3, & 4 PROJECTS*:**

***The purpose of the FDOT Public Information Meeting/Workshop is to present to the public the results of the detailed design for the project and receive comments on the proposed design.***

***The CONSULTANT shall provide all support necessary for the DEPARTMENT to hold a Public Information Meeting/Workshop. The CONSULTANT is expected to actively participate in all portions of the meeting. Conducting the meeting will take knowledgeable CONSULTANT staff and will require enough staff members to***

***handle the crowd anticipated for the meeting.***

***The CONSULTANT shall also provide office support personnel to ensure attendees register (CONSULTANT must provide a sign-in sheet with space available for the person's name, address, and telephone number).***

***Briefing of the DEPARTMENT Design staff by the CONSULTANT (who will be on hand during the meeting) will be done twice. The first time is to be at least seven days prior to the meeting and the second time will be just before the meeting to make sure the staff is up to date on the project and understands the project well enough to discuss it with the public and to answer questions. The CONSULTANT shall assist the DEPARTMENT's Design Project Manager with ensuring that the appropriate DEPARTMENT staff are invited and included in the pre-Public Information Meeting/Workshop briefings. This will include (at a minimum) representatives from the Public Information Office and the Design Office. In addition, the DEPARTMENT's Transportation Planning Area's Urban Liaisons shall be notified of any briefings and public meetings. If the project includes a right-of-way acquisition phase, the Right-of-way Acquisition Administrator shall also be notified of the briefing***.

***FDOT Public Information Meetings/Workshops are held between the 60% - 90% plans stage. For CAP Level 3 and 4 projects, a second meeting will be required closer to the Final Plans stage. Depending on the amount of time spent "on-the-shelf", an additional meeting may be required six (6) months prior to letting, however, staffhours for this effort will be negotiated at the appropriate time.***

***The meeting format will be informal allowing the public to come and go. The meeting will be scheduled for one (1) hour in length. Although the meeting is scheduled for a one (1) hour period, the CONSULTANT staff will be available for some time before and/or after those set hours in order to maintain public contact, etc.***

***Proper signage using display boards no smaller than 2'X2' will be displayed near and on the site directing participants to the meeting place. In addition, the site must meet ADA standards and the CONSULTANT shall provide signs to indicate the location of the available handicapped accesses. A "Title VI" board will be required at the meeting site. The CONSULTANT shall coordinate with the DEPARTMENT to attain "Title VI" board requirements.***

***If issues are identified by participants at the meeting, their significance will be determined by the CONSULTANT and the DEPARTMENT, i.e., are the issues valid enough for further consideration or do they have elements which may require further consideration.***

***Addressing the issues and responding to them is also an integral part of the meeting process. This is to be accomplished by the CONSULTANT. The CONSULTANT shall prepare responses to the issues on DEPARTMENT letterhead to be signed by the District Consultant Project Management Engineer. The CONSULTANT shall pay for the postage. The DEPARTMENT shall review and approve all response letters prior to mailing. Elected Public Officials require***

***a 48-hour response time and will require signature by the District Secretary***.

### 3.1.11 Other Agency Meetings

***In addition to scheduled public meetings the CONSULTANT may be required to participate in meetings with the local governing authorities and/or Metropolitan Planning Organization (MPO). DEPARTMENT staff will conduct all meetings and presentations made for Local Governments and MPOs/TPOs. The CONSULTANT shall prepare the needed presentation materials as directed by the DEPARTMENT's Design Project Manager. The CONSULTANT shall be responsible for participating in the meetings, as well as note taking and the preparation of meeting summaries/minutes.***

### 3.1.12 Web Site

***FOR ALL PROJECTS WITH A PUBLIC MEETING AND/OR HEARING:***

***The CONSULTANT shall create project specific .shtm files for each Public Information Meeting/Workshop and Public Hearing to be posted by the DEPARTMENT to the*** NWFLRoads.com ***web site. Templates and instructions can be obtained through the DEPARTMENT's Design Project Manager.***

***These web files shall be submitted in draft form to the DEPARTMENT's Design Project Manager at the time of the pre-meeting workshop with DEPARTMENT staff that is referenced in Section 3.1.9. Once all materials to be displayed at the Public Meeting/Workshop or Public Hearing have been approved by the DEPARTMENT, the web files shall be updated if necessary and resubmitted at least seven days prior to the Public Meeting/Workshop or Public Hearing.***

## 3.2 Joint Project Agreements

***Should the need for a JPA become a requirement, a supplemental amendment will be negotiated for these services. The CONSULTANT services may include all coordination, meetings, etc., required to include JPA plans (prepared by others) in contract plans package including all necessary revisions/modifications to contract documents to ensure plans compatibility***.

## 3.3 Specifications & Estimates

### 3.3.1 Specifications Package Preparation

The CONSULTANT shall prepare and provide a specifications package in accordance with the DEPARTMENT'S Procedure Topic No. 630-010-005 Specifications Package Preparation and the Specifications Handbook. The CONSULTANT shall provide the DEPARTMENT names of at least two team members who have successfully completed the Specifications Package Preparation Training and will be responsible for preparing the Specifications Package for the project. The Specifications Package shall be prepared using the DEPARTMENT's Specs on the Web application. The CONSULTANT shall be able to document that the procedure defined in the Handbook for the Preparation of Specifications Packages is followed, which includes the quality assurance/quality control procedures. The

specifications package shall address all items and areas of work and include any Mandatory Specifications, Modified Special Provisions, and Technical Special Provisions.

The specifications package must be submitted for review to the District Specifications Office at least 30 days prior to the contract package to Tallahassee or District due date, or sooner if required by the District Specifications Office. This submittal does not require signing and sealing and shall be coordinated through the District's Project Manager. The CONSULTANT shall coordinate with the DEPARTMENT on the submittal requirements, but at a minimum shall consist of (1) the complete specifications package, (2) a copy of the marked-up workbook used to prepare the package, and (3) a copy of the final project plans.

Final submittal of the specifications package must occur at least 10 working days prior to the contract package to Tallahassee due date. This submittal shall be digitally signed, dated, and sealed in accordance with applicable Florida Statutes.

**3.3.2 Estimated Quantities Report Preparation**

The CONSULTANT shall prepare an Estimated Quantities (EQ) Report in accordance with FDM 902. Includes loading category information, pay items, and quantities into Designer Interface for AASHTOWare Project Preconstruction (PrP), QA/QC efforts associated with AASHTOWare PrP and the EQ Report.

***Quantities shall be included in an Estimated Quantities Report per FDM 902.***

***The CONSULTANT shall be responsible for inputting pay items and quantities into the DEPARTMENT's Project Preconstruction (PrP) System through the use of the DEPARTMENT's Designer Interface.***

***Phase I - The project shall be established in PrP by Phase I (30%). The District Preliminary Estimates Office will create the project(s) in the system upon receiving a copy of the Notice to Proceed for the design contract.***

***Phase II - A Summary of Pay Items sheet shall be prepared with Phase II and subsequent plans submittals. The Phase II (60%) submittal shall have all pay items identified with or without quantities. If quantities have not been determined at this point, the CONSULTANT shall load a quantity of "1.0".Phases III & IV - At Phase III (90%) the CONSULTANT shall have all quantities loaded into PrP, with only minor change anticipated at subsequent submittals. Within PrP, the CONSULTANT shall run a Project Edit Report for the project at Phases III and IV just prior to submitting the plans to the DEPARTMENT for review. This program outputs invalid pay items that may be erroneously loaded for a project. The above shall be provided for each component set of plans (i.e., Roadway, Bridge, Signing and Marking, etc.).***

**3.4 Contract Maintenance and Project Documentation**

***Contract maintenance includes project management effort for complete setup and maintenance of files, electronic folders and documents and developing technical***

***monthly progress reports and schedule updates. Project Documentation includes the compilation and delivery of final documents, reports or calculations that support the development of the contract plans. Once all files have been finalized, the CONSULTANT shall provide them to the DEPARTMENT's Design Project Manager in a Project-DOCUMENTATION.zip folder to upload to Electronic Document Management System (EDMS) or Project Suite Enterprise Edition (PSEE). See FDM 111.7 for guidance on the organization and delivery of Project Documentation.***

***The CONSULTANT will be required to provide written monthly progress reports (preferably electronic via email) documenting actions taken, actions to be taken, status of project schedule, and contacts with the DEPARTMENT (the DEPARTMENT employee contacted, the issue, and the resolution), and the status of the plans.***

***The CONSULTANT will also be required to make monthly schedule updates for tasks assigned to the CONSULTANT in FDOT Project Suite Enterprise Edition (PSEE). Schedule updates are due the last Friday of each month.***

**3.5 Value Engineering (Multi-Discipline Team) Review** (Not applicable to this project)

**3.6 Prime Consultant Project Manager Meetings**

***Includes only the Prime Consultant Project Manager's time for travel and attendance at Activity Technical Meetings and other meetings listed in the meeting summary for Task 3.6 on tab 3 Project General Task of the staff hour forms. Staff hours for other personnel attending Activity Technical Meetings are included in the meeting task for that specific Activity.***

**3.7 Plans Update**

***The effort needed for Plans Update services will vary from project to project, depending on size and complexity of the project, as well as the duration of time spent "on the shelf".***

***Staffhours negotiated for this task during the initial staffhour and fee submittal will include efforts necessary to kick-off Plans Update Services due to an accelerated schedule.*** It is recommended that the CONSULTANT coordinate with the DEPARTMENT's Contract Manager to differentiate the staffhours for the Plans Update effort in the Automated Fee Proposal (AFP) from the Basic Services effort. ***Staffhours for the remainder of the anticipated Plans Update Services will be negotiated following Basic Services and at the time that the plans come "off the shelf".***

***The CONSULTANT shall perform engineering analyses and/or make revisions to original plans and documents, as requested by the DEPARTMENT, to reflect additions, deletions and/or modifications prior to and subsequent to letting.*** The CONSULTANT shall be aware that minor modifications and/or updates to the original plans are to be expected. These minor refinements shall not be a basis for

any payment under the Plans Update supplemental amendment.

**3.8 Post Design Services**

***Staffhours and fees for Post Design Services will be submitted and negotiated post-letting and in advance of the Pre-Construction Conference. All Phase 32 funds (Basic Services and Plans Update Services) shall be expended or released prior to initiating Post Design Services (Phase 62).***

***Identifying the effort needed for Post Design Services will vary significantly from project to project depending on size and complexity of the project. The approach described herein assists the DEPARTMENT in determining an initial estimate of the work effort needed for the Engineer of Record (EOR) to support the DEPARTMENT in the construction of a project.***

***Post Design Services include Construction Assistance and Review of Shop Drawings as noted below. In addition, these services are included for the CONSULTANT to attend and provide information at the Pre-Construction Conference. Subsequent construction field meetings are to be attended as required. The frequency of meetings shall be based on the complexity of the project and as directed by the DEPARTMENT's Design Project Manager.***

***The EOR will be required to respond to any request from the CONTRACTOR within 24 hours. This does not mean that the issue will be resolved; it simply means that the EOR has received the request, states an immediate course of action, and begins the communication process.***

***The activities associated with Post Design Services can be characterized as the following:***

***Meetings: The EOR is expected to attend all pre-construction meetings as well as those regularly scheduled meetings throughout the construction phase when deemed necessary by the DEPARTMENT's Construction Project Manager.***

***Construction Assistance: This includes responses to Requests for Information (RFI), interpretation of construction plans and documents, and engineering solutions to changed conditions encountered in the field. Site visits shall be made by the EOR consultant when agreed upon with the DEPARTMENT's Construction Project Manager. The CONSULTANT shall provide to the DEPARTMENT qualified representation during the construction phase to address issues concerning the intent and interpretation of the construction contract plans and documents prepared in the work. From time to time during construction the CONSULTANT may be requested by the DEPARTMENT or its designated representative to review CONTRACTOR proposed field changes or to respond with a recommended solution to remedy particular field situations not covered by the plans and specifications***

***Plan Revisions: This includes effort required to provide revised plan sheets reflecting any changes made during the Right-of-Way Acquisition or Construction phases of a project. During Right-of-Way or Construction phases, the***

***CONSULTANT may be requested by the DEPARTMENT to review proposed field changes or to respond with a recommended solution to remedy particular field situations not covered by the plans and specifications.***

***<u>Shop Drawing Review</u>: This includes review of shop drawings and erection plans for all components supplied by the CONTRACTOR and required by the bid documents. For all independently supported sign structures of which the CONTRACTOR is responsible, the CONSULTANT will review and check all the foundation, sign structure design, and shop drawings submitted by the CONTRACTOR. Shop drawing reviews shall be performed by the CONSULTANT in accordance with the Standard Specifications for Road and Bridge Construction.***

***<u>Load Ratings</u>: Projects involving bridges typically have the load rating done during the design phase work. If the as-built bridge complies with the bid documents, the EOR should be willing to certify the load rating performed during design is adequate for the as-built condition of the bridge. However, if the as-built bridge was built in a modified or altered condition from the bid documents, an updated load rating may be required. Therefore, during construction, the EOR may be asked to perform an updated load rating based on the as-built condition of the bridge. As an aid in the negotiations the Structures Design Office has established guidelines for the development of staff-hours for load rating various bridge types***.

***Post design services may also include:***

- ***Reestablishment of the original survey control just prior to construction (Refer to Section 5-7.1 of the Standard Specifications for Road and Bridge Construction).***
- ***Flagging R/W for acquisition***
- ***Monumentation of the R/W after construction is complete for projects with right-of-way acquisition***
- ***Comprehensive utility coordination and conflict resolution during construction.***

***Note: All services will be agreed upon by the DEPARTMENT's Construction Project Manager and approved by the DEPARTMENT's Design Project Manager***.

The CONSULTANT shall submit a "Post Design Services Status Report" in *.xlsx format with every invoice during this phase. A blank example of this report can be provided by the DEPARTMENT's Design Project Manager.

***Post Design Services are not intended for instances of CONSULTANT errors and/or omissions.***

**3.9 Digital Delivery**

The CONSULTANT shall deliver final contract plans and documents in digital format. The final contract plans and documents shall be digitally signed and sealed files delivered to the DEPARTMENT on acceptable electronic media, as determined

by the DEPARTMENT.

**3.10 Risk Assessment Workshop** (Not applicable to this project)

**3.11 Railroad, Transit and/or Airport Coordination**

***Coordination with the Railroad may be a part of an assigned project. The CONSULTANT shall coordinate with the DEPARTMENT's Railroad Coordinator and Design Project Manager to discuss communication with the Railroad.***

**3.11.1 Aeronautical Evaluation**

The Consultant shall be responsible for complying with the requirements of Title 14 of the Code of Federal Regulations Part 77 (14 CFR Part 77), and for determining whether it is necessary to file any Notice of Proposed Construction or Alteration (FAA Form 7460-1) with the Federal Aviation Administration (FAA), utilizing the FAA Notice Criteria Tool. Place a copy of all pertinent documentation in the Project Documentation folder structure; e.g., Notice Criteria Tool inquiries and responses; FAA Form 7460-1 filed with the FAA; Letters of Determination (along with the records demonstrating compliance with the conditions and deadlines). Report any Letters of Determination, designated other than "Does Not Exceed", to the Central Office (Aviation Office, Airspace and Land Use Manager).

**3.12 Landscape and Existing Vegetation Coordination**

Coordinate to ensure preservation and protection of existing vegetation. Relocation of existing vegetation may be necessary in some cases. Space for proposed landscape should be preserved and conflicts with drainage, utilities, ITS, and signage should be minimized. Coordination with the District Landscape Architect may be necessary as defined in 4.12. Additionally, coordination with the Florida Scenic Highways program should be included to ensure any requirements of the FSH program are met.

**3.13 Other Project General Tasks**

## 4 ROADWAY ANALYSIS

The CONSULTANT shall analyze and document Roadway Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums.

**4.1 Typical Section Package**

The CONSULTANT shall provide an approved signed and sealed Typical Section Package ***to be submitted to the DEPARTMENT for review and concurrence*** prior to the Phase I plans submittal date. This package shall include the following:

- ***Transmittal Letter, Location Map(s), Typical Section(s) (including bridge sections and any affected paved multi-use path sections), Project Control Sheet(s)***

**4.2 Pavement Type Selection Report**

***For some assigned projects, the DEPARTMENT will be responsible for the Pavement Type Selection Report. For other assigned projects, the CONSULTANT will be responsible for conducting a pavement type selection analysis and report in accordance with the FDOT's current Pavement Type Selection Manual***.

***This analysis shall be conducted after coring and prior to developing the Typical Section Package for the project. Results of this analysis shall be submitted to and concurred by the Department prior proceeding with the project. The Pavement Type Selection decision will again be reviewed by FDOT Design at the time the pavement is designed to warrant reconsideration. A letter to the Project Design File documenting the pavement type decision is required, even if no report is performed***.

**4.3 Pavement Design Package**

***The Pavement Condition Survey (including coring, testing, and preparing the report) will be provided as directed in Section 35.22 of this Scope of Services***.

***For some assigned projects, the DEPARTMENT will be responsible for the Pavement Design***.

***For other assigned projects***, ***the CONSULTANT may be required to provide*** an approved Pavement Design Package in accordance with applicable FDOT pavement design manuals along with the Phase I ***(30%)*** plans submittal. ***The Pavement Design shall comply with the most recent version of the FDOT Pavement Design Manual. The CONSULTANT may contact the District Materials Office to obtain a copy of the Department's Pavement Design Package Requirements.***

***The CONSULTANT shall provide the District Materials Office the opportunity to review the Pavement Design. The Pavement Design shall be submitted for concurrence, prior to plan implementation.***

***The CONSULTANT shall consider the number of lifts and constructability when designing the pavement mix. The CONSULTANT shall consider these issues, as construction plans are prepared. The CONSULTANT shall provide an approved Pavement Design Package for DEPARTMENT concurrence prior to the Phase II Plans submittal date***.

**4.4 Cross-Slope Correction**

***Includes the effort necessary to review the existing cross-slopes and the need for overbuild with the District Construction Office and the District Bituminous Engineer and to prepare needed overbuild details, notes, and tables.***

***<u>As early as possible</u>, the collected survey data along the projects shall be analyzed by the CONSULTANT to determine if minimum and maximum cross-slope requirements are met throughout the project limits. Once the determination is made that cross slope correction will be implemented, the CONSULTANT must***

***determine if any additional survey is required to provide an adequate design and accurate quantities. The CONSULTANT will hold a coordination meeting with the DEPARTMENT's Design Project Manager, the District Survey Office, the District Design Office, and the District Materials Office to determine how much additional survey is required and what is the most economical method of obtaining the additional data. The CONSULTANT shall then review the cross sections with the District Construction Office and the District Bituminous Engineer to determine the method of correction (variable depth milling or overbuild) and the details/tables required. A proposed design for cross slope correction must be included in the Phase II Plans.***

**4.5 Horizontal/Vertical Master Design Files**

***The CONSULTANT shall design the geometrics using the Standard Plans that are most appropriate with proper consideration given to the design traffic volumes, design speed, capacity and levels of service, functional classification, adjacent land use, design consistency and driver expectancy, aesthetics, existing vegetation to be preserved, pedestrian and bicycle concerns, ADA requirements, Safe Mobility for Life Program, access management, PD&E documents and scope of work. The CONSULTANT shall assure all existing utilities are plotted for potential conflict identification and also develop utility conflict information to be provided to project Utility Coordinator in the format requested by the DEPARTMENT.***

**4.6 Access Management**

The CONSULTANT shall incorporate access management standards for each project in coordination with DEPARTMENT staff. The CONSULTANT shall review adopted access management standards and the existing access conditions (interchange spacing, signalized intersection spacing, median opening spacing, and connection spacing). Median openings that will be closed, relocated, or substantially altered shall be shown on plan sheets and submitted with supporting documentation for review with the first plans submittal.

***The degree of application shall be determined by the CONSULTANT in agreement with the DEPARTMENT's Design Project Manager after taking into consideration the effort of work as well as whether the project is located on an FIHS (or SIS) corridor. Access management standards shall be implemented on all new construction or widening projects located on the FIHS (or SIS) corridor. Along non-FIHS corridors (or SIS), access management standards shall be applied on all multi-lane reconstruction projects or projects affecting the roadway classification. However, the degree of implementation shall be carefully considered for RRR projects. For those types of projects, access management standards should be more location/site specific. Access Management considerations should be developed after review of historic crash data for specific locations along the roadway. When access management criteria are applied, the CONSULTANT shall review adopted access management standards and the existing access conditions (interchange spacing, signalized intersection spacing, median opening spacing, and connection spacing). Median openings proposed to be closed, relocated, or substantially altered shall be shown on plan sheets and submitted with supporting documentation at the DEPARTMENT's first review***

***(Phase I or Phase II) of the plans submittal.***

The DEPARTMENT shall provide access management classification information and information derived from PD&E studies and public hearings to be used by the CONSULTANT. ***The CONSULTANT shall be aware that certain proposed deviations from access management and median opening spacing standards must be presented to the District Access Management Review Committee (AMRC)(see also Sections 2.1 and 3.1.4). At a minimum, access management, driveway, and median opening issues not resolved in the District's staff level process, as well as proposed full movement median openings not meeting the spacing standards in Rule Chapter 14-97, F.A.C by a threshold of 10% or more shall be taken to the AMRC for review.***

***Projects that propose modification to currently available turning movements by dividing a state highway, erecting median barriers, or having the effect of closing or modifying an existing access to an abutting property owner will necessitate a Public Hearing vs. Public Meeting/Workshop only when a Public Hearing was NOT conducted during a PD&E phase.***

***Unused/nonfunctional driveways may need to be replaced with curb and gutter when future use of the driveway is not feasible. The CONSULTANT will be responsible for notifying property owners in writing prior to altering or removing driveways. The CONSULTANT shall coordinate this activity with the DEPARTMENT's Design Project Manager prior to notifying the property owners. The CONSULTANT's notification will be via a prepared letter, on FDOT letterhead, requesting permission to alter or remove any driveways as appropriate. The DEPARTMENT's Design Project Manager or District Consultant Project Management Engineer will review and approve/reject the proposed closures and will ultimately sign any closure letter(s) to be sent to property owners. Driveway widths should be evaluated to determine if improvements are warranted to provide better refuge for pedestrians on the sidewalk or to improve safety at intersections. The design should comply with Rule 14-96, Connection Permit Applications, and Rule 14-97, Access Management.***

## 4.7 Roundabout Final Design Analysis

The CONSULTANT shall finalize the design of the roundabout in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums.

The CONSULTANT shall perform a final roundabout operational analysis that recommends a functional geometric layout that is cost effective, safe and meets the needs of the community. A final roundabout design will be recommended for implementation, and all geometric and operational analysis will be documented in a final roundabout report.

## 4.8 Cross Section Design Files

The CONSULTANT shall establish and develop cross section design files in accordance with the FDOT CADD Manual ***and plot existing utilities for utility conflict identification and adjustment.***

Note: If the Cross Sections are prepared using a 3D model, use Task 36.5 instead of Task 4.9 for the Cross Section Design Files.

**4.9 Temporary Traffic Control Plan (TTCP) Analysis**

The CONSULTANT shall design a safe and effective TTCP to move vehicular and pedestrian traffic during all phases of construction. The design shall include construction phasing of roadways ingress and egress to existing property owners and businesses, routing, signing and pavement markings, and detour quantity tabulations, roadway pavement, drainage structures, ditches, front slopes, back slopes, drop offs within clear zone, transit stops, and traffic monitoring sites. Special consideration shall be given to the construction of the drainage system when developing the construction phases. Positive drainage must be maintained at all times. The design shall include construction phasing of roadways to accommodate the construction or relocation of utilities when the contract includes Joint Project Agreements (JPAs).

The CONSULTANT shall investigate the need for temporary traffic signals, temporary highway lighting, detours, diversions, lane shifts, and the use of materials such as sheet piling in the analysis. The Traffic Control Plan shall be prepared by a certified designer who has completed training as required by the DEPARTMENT. Before proceeding with the TTCP, the CONSULTANT shall meet with the appropriate DEPARTMENT personnel. The purpose of this meeting is to provide information to the CONSULTANT that will better coordinate the Preliminary and Final TTCP efforts.

***For projects with TTCP Levels of II or III, the CONSULTANT shall be prepared to provide materials for and participate in a Temporary Traffic Control Plans (TTCP) Workshop. The DEPARTMENT will submit the project's Temporary Traffic Control Plans for an external peer review at Phase II. Following this review, the DEPARTMENT's Design Project Manager will schedule the TTCP Workshop.***

***Materials to be provided by the CONSULTANT to facilitate the TTCP Workshop shall include, but not be limited to the following (in no particular order):***

- ***Plan view aerial roll plot of each traffic control phase involving a lane shift with side streets and businesses labeled***
- ***Traffic control typical sections***
- ***The most recent set of construction plans***

***The effort associated with attending this workshop shall be included in Section 4.22.***

***The CONSULTANT shall conduct a Lane Closure Analysis to determine work conditions when no lane closures will be allowed.***

***For Goes-With Projects, the Temporary Traffic Control Plans for this project and the adjacent goes-with project shall be coordinated and designed accordingly. The CONSULTANT shall discuss with the DEPARTMENT's Design Project Manager whether the TTCPs and associated mobilization and quantities shall be combined***

***and included under the lead project or if two separate TTCPs will be designed.***

***The CONSULTANT shall consider the local impact of any lane closures or alternate routes. When the need to close a road is identified during this analysis, the CONSULTANT shall notify the DEPARTMENT's Project Manager as soon as possible. Proposed road closings must be reviewed and approved by the DEPARTMENT. Diligence shall be used to minimize negative impacts by appropriate specifications, recommendations or plans development. Local impacts to consider will be local events, holidays, peak seasons, detour route deterioration and other eventualities. The CONSULTANT shall be responsible for obtaining local authorities' permission for use of detour routes not on state highways.***

## 4.10 Master TTCP Design Files

The CONSULTANT shall develop master TTCP files showing each phase of the TTCP. This includes all work necessary for designing lane configurations, diversions, lane shifts, signing and pavement markings, temporary traffic control devices, and temporary pedestrian ways.

## 4.11 Selective Clearing and Grubbing

***The CONSULTANT shall make every effort to preserve and protect existing landscaping as well as proposed landscaping within the project limits. Relocation of existing vegetation may be required in some cases.***

***The CONSULTANT shall include in the plans instructions for the care and maintenance of the tree preservation areas, and selective clearing and grubbing areas throughout the construction period. The CONSULTANT will coordinate with the District Landscape Architect to ensure that the intent of the tree preservation areas is in alignment with future highway landscape plans.***

### a) Selective Clearing and Grubbing of Existing Vegetation Field Assessment

The CONSULTANT shall review information from the DEPARTMENT and conduct a project field assessment(s) of existing vegetation. At least one field assessment visit is to be attended by the District Landscape Architect.

The Result of the Field Assessment(s) will determine the course of action for Selective Clearing and Grubbing and the extent of the Vegetation Survey under Task 2.10.

### b) Selective Clearing and Grubbing Site Inventory Analysis of Existing Vegetation and Cross-Discipline Coordination

The CONSULTANT shall coordinate with the District Utility Office, drainage engineers, and traffic engineers to ensure that preservation of existing vegetation is coordinated between all disciplines. Coordinate with the District Landscape Architect.

Based on the field assessment, the CONSULTANT may be required do a site inventory analysis of existing vegetation, opportunities for preservation and

protection of existing vegetation, relocation options, and selective removal of nuisance and/or non-nuisance vegetation. Coordinate with surveyor to have trees and vegetation tagged and surveyed, per tasks 27.28 or 27.29.

**c) Selective Clearing and Grubbing- Existing Vegetation Maintenance Report**

The CONSULTANT shall include in the plans instructions for the care and maintenance of the plant preservation areas, and selective clearing and grubbing areas throughout the construction period. The CONSULTANT will coordinate with the District Landscape Architect to ensure that the intent of the plant preservation areas is in alignment with future highway landscape plans. The CONSULTANT should be knowledgeable in arboricultural practices to the extent that they are able to deliver detailed and informed Selective Clearing and Grubbing Plans.

## 4.12 Tree Disposition Plans

***The CONSULTANT*** will prepare a Tree Disposition Plan outlining the requirements for the removal, relocation, and remaining trees located within the project boundaries. ***The CONSULTANT*** will utilize the information collected from the Vegetation Survey and information collected under task 4.12 for Selective Clearing and Grubbing.

## 4.13 Design Variations and Exceptions

The CONSULTANT shall prepare the documentation necessary to gain DEPARTMENT approval of all appropriate Design Variation Memorandums, Formal Design Variations and/or Design Exceptions.

A Project Design Variation Memorandum (FDM Form 122-B) shall be prepared to document all non-controlling design elements for a project that do not meet Department criteria. Those elements requiring a more detailed analysis, as per FDM Section 122.2, shall be submitted as Formal Design Variations or Design Exceptions.

## 4.14 Design Report

The CONSULTANT shall prepare all applicable report(s) as listed in the Project Description section of this scope, ***including the ADA Survey Report (if applicable) and Safety Report (if applicable).*** Reports are to be delivered as a signed and sealed pdf file.

ADA Survey Report (IF APPLICABLE): This task shall include the effort to prepare the ADA Survey Report. This report ***will provide photographic and tabular documentation of the existing pedestrian features (sidewalk, curb ramps, bus stops, pedestrian signal/detectors, etc.). In addition, t***he CONSULTANT shall review all legs of all sideroad intersections (signalized and unsignalized) to determine if pedestrian signals and/or crosswalks are needed. ***The report shall identify the deficiencies and make recommendations for improvement.*** The CONSULTANT will be responsible for contacting the District Bike/Ped Coordinator, ADA Coordinator, Area Maintenance Office and the District Traffic Operations Office to determine if any project specific pedestrian access or safety related complaints have

been received. The ADA Survey Report will be required with the PHASE I submittal.

**4.15 Quantities for EQ Report**

The CONSULTANT shall determine pay items and quantities and the supporting documentation, including construction days when required.

***The CONSULTANT shall develop accurate quantities and the supporting documentation, including construction days when required. Quantities shall be included in an Estimated Quantities Report per FDM 902.***

***The CONSULTANT shall be responsible for inputting pay items and quantities into the DEPARTMENT's Project Preconstruction (PrP) System through the use of the DEPARTMENT's Designer Interface.***

***Phase I - The project shall be established in PrP by Phase I (30%). The District Preliminary Estimates Office will create the project(s) in the system upon receiving a copy of the Notice to Proceed for the design contract.***

***Phase II - A Summary of Pay Items sheet shall be prepared with Phase II and subsequent plans submittals. The Phase II (60%) submittal shall have all pay items identified with or without quantities. If quantities have not been determined at this point, the CONSULTANT shall load a quantity of "1.0". Phases III & IV - At Phase III (90%) the CONSULTANT shall have all quantities loaded into PrP, with only minor change anticipated at subsequent submittals. Within PrP, the CONSULTANT shall run a Project Edit Report for the project at Phases III and IV just prior to submitting the plans to the DEPARTMENT for review. This program outputs invalid pay items that may be erroneously loaded for a project. The above shall be provided for each component set of plans (i.e., Roadway, Bridge, Signing and Marking, etc.).***

**4.16 Cost Estimate**

***The CONSULTANT shall be responsible for producing a construction cost estimate and reviewing and updating the cost estimate when scope changes occur and/or at milestones of the project.***

***<u>For Multilane projects</u>: Prior to Phase I - Within 30 (thirty) calendar days of the written Notice to Proceed, the CONSULTANT shall submit a revised construction cost estimate using the DEPARTMENT's Long Range Estimating System (L.R.E.). The revised estimate shall be based on all work items likely to be included in the project whether or not explicitly defined in this initial scope of work, including, but not limited to, work items being analyzed for possible inclusion in the scope after DEPARTMENT approval. This estimate is understood to be preliminary and will be used to better budget construction costs. The District Preliminary Estimates Office will provide the CONSULTANT with a version of the L.R.E. in the system for their use.***

***Phase I - For the Phase I (30%) submittal, the CONSULTANT shall submit the***

***cost estimate using the DEPARTMENT's Long Range Estimating (L.R.E.) system.***

***Phase II - For the Phase II (60%) submittal, the CONSULTANT shall submit the cost estimate using the DEPARTMENT's Long Range Estimating (L.R.E.) System.***

***Phases III & IV - The complete submittal package, including the CONSULTANT's construction cost estimate, will be provided to the District Preliminary Estimates Office at phases III (90%) and IV (100%). The above shall be provided for each component set of plans (i.e., Roadway, Bridge, Signing and Marking, etc.). If the project includes a Special Detour, the CONSULTANT shall prepare and submit a Special Detour Quantity Worksheet for submittal at phase III (90%).***

**4.17 Technical Special Provisions and Modified Special Provisions**

**4.18 Other Roadway Analyses**

***FOR TREE IMPACTS - The CONSULTANT shall be prepared to provide and present alternate design scenarios with corresponding cost estimates and implications (drainage, utilities, etc.) when tree impacts are anticipated. On projects where numerous impacts are expected, the CONSULTANT shall produce a tree conflict matrix to describe tree types, sizes, and locations as well as the expected impacts and suggested remedies to alleviate.***

**4.19 Field Reviews**

**4.20 Monitor Existing Structures**

***The CONSULTANT shall perform field observations to visually identify existing structures within the project limits which may require settlement, vibration or groundwater monitoring by the contractor during construction in accordance with FDM Chapter 307. The CONSULTANT shall identify the necessary pay items to be included in the bid documents to monitor existing structures.***

***Optional Services (may be negotiated at a later date if needed): The CONSULTANT shall coordinate with and assist the geotechnical engineer and/or structural engineer to develop mitigation strategies (when applicable).***

**4.21 Technical Meetings**

This task includes effort for (but is not limited to) the following meetings:

***Production Survey Meeting: This task includes the effort for the CONSULTANT to attend the Production Survey Meeting as described in Section 2.10.***

***Line and Grade Meeting: This task includes efforts associated with the Line and Grade Meeting. The CONSULTANT will coordinate the scheduling, format and materials necessary with the DEPARTMENT's Design Project Manager.***

***<u>Cross Slope Correction Meeting:</u> This task includes efforts associated with the Cross Slope Correction Meeting referenced in Section 2.1 and Section 4.4. The CONSULTANT will coordinate the scheduling, format and materials necessary with the DEPARTMENT's Design Project Manager.***

***<u>Pond Siting Workshop:</u> This task includes efforts associated with the Pond Siting Workshop. The CONSULTANT will coordinate the scheduling, format and materials necessary with the DEPARTMENT's Design Project Manager.***

***<u>Pre 30% Review Workshop:</u> This workshop will be held with DEPARTMENT personnel for presenting the CONSULTANT's intended approach to the project. The CONSULTANT will be expected to document names/titles of those in attendance as well as all pertinent discussions and decisions from the meeting. Upon DEPARTMENT approval of the recommendations, the project will progress to the Design Phase.***

***<u>Phase I (30%) Estimate Review Workshop:</u> This workshop will be held with DEPARTMENT personnel to discuss the Phase I construction estimate and plans. The CONSULTANT should be prepared to discuss items of work that could significantly impact the construction estimate and answer questions related to the Phase I construction estimate. The CONSULTANT will coordinate the scheduling, format, and materials necessary with the DEPARTMENT's District Estimates Manager.***

***<u>Post 60% Review Workshop:</u> These workshops are typically held with DEPARTMENT Area Operations personnel in conjunction with the Utility Design Meeting (see section 7.9). The workshops take place at a location appropriate for the project that will allow for a same-day project site visit. The workshops may consist of a Project Briefing, Project Design Review Workshop, and a Field Review; however, the format and need for the meeting will depend on the project's complexity and the CONSULTANT's familiarity with the District's policies and procedures. The workshop will be co-chaired by the CONSULTANT and the DEPARTMENT's Design Project Manager. The DEPARTMENT's Area Utility Manager will chair and take minutes of the utility coordination segment of the workshop.***

***<u>TTCP Workshop:</u> For projects with TTCP Levels of II or III, the CONSULTANT shall attend an TTCP Workshop to present the Temporary Traffic Control Plans to the DEPARTMENT. This workshop will be scheduled by the DEPARTMENT's Design Project Manager to occur at some point following the Phase II plans review. The effort to prepare necessary workshop materials shall be included in Section 4.10.***

**4.22 Quality Assurance/Quality Control**

**4.23 Independent Peer Review** (Not applicable to this project)

**4.24 Supervision**

**4.25 Coordination**

## 5 ROADWAY PLANS

The CONSULTANT shall prepare Roadway, TTCP, Utility Adjustment Sheets, plan sheets, notes, and details. The plans shall include the following sheets necessary to convey the intent and scope of the project for the purposes of construction.

***On some projects, traffic monitoring sites may have to be included. The CONSULTANT shall be responsible for loading all quantities for the installation and/or removal of a traffic monitoring site(s) and showing the location of the site(s) on the Key Sheet and plan sheets (as applicable). The DEPARTMENT shall be responsible for providing the location to the CONSULTANT.***

***Contamination – All underground fuel tanks and monitoring wells within the proposed right-of-way are to be located and shown/tabulated in the plans. All piping and pumps in association with the tanks shall also be located and identified by the survey. The CONSULTANT shall relay to the DEPARTMENT any findings of contaminated soil, monitoring wells, or any features (particularly springs or sinks) relating to contamination or hazardous material.***

### 5.1 Key Sheet

### 5.2 Typical Section Sheets

5.2.1 Typical Sections

5.2.2 Typical Section Details

### 5.3 General Notes/Pay Item Notes

### 5.4 Project Layout

### 5.5 Plan/Profile Sheet

### 5.6 Profile Sheet

### 5.7 Plan Sheet

### 5.8 Special Profile

### 5.9 Back-of-Sidewalk Profile Sheet

### 5.10 Interchange Layout Sheet

### 5.11 Ramp Terminal Details (Plan View)

### 5.12 Intersection Layout Details

### 5.13 Special Details

### 5.14 Cross-Section Pattern Sheet(s)

**5.15 Roadway Soil Survey Sheet(s)**

**5.16 Cross Sections**

**5.17 Temporary Traffic Control Plan Sheets**

**5.18 Temporary Traffic Control Cross Section Sheets**

**5.19 Temporary Traffic Control Detail Sheets**

**5.20 Utility Adjustment Sheets**

**5.21 Selective Clearing and Grubbing Sheet(s)**

5.21.1 Selective Clearing and Grubbing

5.21.2 Selective Clearing and Grubbing Details

**5.22 Tree Disposition Plan Sheet(s)**

5.22.1 Tree Disposition Plan Sheet(s)

5.22.2 Tree Disposition Plan Tables and Schedules

**5.23 Project Control Sheet(s)**

**5.24 Environmental Detail Sheets**

***Preparation of detail sheets for potential environmental issues such as, underground fuel tanks and monitoring wells, septic tanks within the proposed right of way. All piping and pumps in association with the above referenced issues shall also be located and identified by the survey. The CONSULTANT shall relay to the DEPARTMENT any findings of contaminated soil, monitoring wells, or any features (particularly springs or sinks) relating to contamination or hazardous material.***

***Coordination with Permits/Environmental staff and preparing Dredge & Fill Detail sheets where applicable.***

**5.25 Utility Verification Sheet(s) (SUE Data)**

**5.26 Quality Assurance/Quality Control**

**5.27 Supervision**

## 6a DRAINAGE ANALYSIS

The CONSULTANT shall analyze and document Drainage Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums.

The CONSULTANT shall be responsible for designing a drainage and stormwater management system. All design work shall comply with the requirements of the appropriate regulatory agencies and the DEPARTMENT's Drainage Manual. ***Electronic copies of any modeling software utilized for design shall be submitted to the DEPARTMENT during Final Plans Processing.***

***The CONSULTANT shall field inspect the project for the structural condition of all side drains, cross drains, and drainage under the roadway area and make recommendations concerning repairs, extensions, replacement/upgrade, or removal of such facilities. Drainage structures shall be assessed and designed to meet clear zone requirements within existing right of way or a Design Variation or Exception must be obtained. Culverts that warrant replacement shall be itemized and detailed as appropriate in the construction plans. The CONSULTANT shall contact and document discussions with the DEPARTMENT's local Maintenance Office (or the local maintaining agency for off-system projects) regarding historical drainage problems in the project areas.***

***The CONSULTANT shall develop a drainage map based upon available information and field reviews. The available information should consist of old Florida Department of Transportation Plans, USGS Quadrangles, USGS Studies, NWFWMD Studies, FEMA Studies, Local Government Agency Studies or Contours, etc. The drainage map should be included in the Hydraulic Design Study. The Hydrology should be by regional or local regression equations, or by the rational method. An assumed velocity should not be used. The CONSULTANT shall document the Drainage Design in the Drainage Design Study (23CFR650A). The Design Study should show that the design requirements of the DEPARTMENT and FHWA have been met.***

***The CONSULTANT has the responsibility for determining the need, appropriate locations, and sizes for water management facilities, and drainage outfalls.***

***In the areas of poor drainage, significant addition of impervious surface, or inadequacy of sufficient downstream conveyance, the CONSULTANT shall address the requirements of Ch. 14-86 F.A.C. Alternate detention facilities shall be conceptually designed, costed and presented to the DEPARTMENT for consideration. Detention facilities to be considered include open basins, underground pipes or vaults, and french drains. The DEPARTMENT will decide on the alternate to be used.***

***Flood data requirements will be determined in accordance with DEPARTMENT procedures. Flood data will be required in plans under the following conditions 1) necessary for all structures that are being modified, 2) necessary for all structures that have a history of flooding or other hydraulic problems even if the structure is not to be modified, 3) necessary for structures that may not be modified but share a drainage basin with another structure being modified and are being impacted by such modification.***

***The CONSULTANT will consider alternate culvert materials in accordance with the DEPARTMENT's Drainage Manual.***

***Prior to Phase II (60%) plans submittal, the CONSULTANT shall meet with the District Drainage Engineer. The purpose of this meeting is to provide information to the***

***CONSULTANT that will better coordinate the Preliminary and Final Drainage Design efforts.***

***The CONSULTANT shall provide the DEPARTMENT's District Drainage Engineer a signed and sealed Drainage Design Study. The study shall include a narrative description of existing and proposed drainage structures, conditions, and facilities, and a listing of environmental regulatory permits required. All hydrologic and hydraulic drainage computations for the design presented in the plans shall be included along with supporting design information such as drainage maps, geotechnical data (such as soil borings and permeability tests), and correspondence that directly affected design decisions.***

***When designing stormwater treatment facilities, the CONSULTANT shall coordinate with the District Permit Coordinator and the District Drainage Engineer for the purpose of incorporating additional treatment for future unforeseen access management modifications that will contribute to the impervious area on the project.***

The CONSULTANT ***must*** coordinate fully with the appropriate permitting agencies and the DEPARTMENT's staff. All activities and submittals should be coordinated through the DEPARTMENT's Project Manager. The work will include the engineering analyses for any or all of the following:

**6a.1 Drainage Map Hydrology**

Create a (pre and/or post condition) working drainage basin map to be used in defining the system hydrology. This map shall incorporate drainage basin boundaries, existing survey and/or LiDAR and field observations, as necessary, to define the system. Basin delineations shall also include any existing collection systems in a logical manner to aid in the development of the hydraulic model. Include coordination hours needed to convey drainage hydrologic features onto produced drainage maps**.**

**6a.2 Base Clearance Calculations**

Analyze, determine, and document high water elevations per basin which will be used to set roadway profile grade and roadway materials. Determine surface water elevations at cross drains, floodplains, outfalls and adjacent stormwater ponds. Determine groundwater elevations at intervals between the above-mentioned surface waters. Document findings in a Base Clearance Report**.**

**6a.3 Pond Siting Analysis and Report**

Evaluate pond sites using a preliminary hydrologic analysis. Document the results and coordination for all the project's pond site analyses. The Drainage Manual provides specific documentation requirements**.**

***The CONSULTANT shall prepare a Pond Siting Report for the project in accordance with the DEPARTMENT'S Stormwater Facilities Handbook.***

***The Pond Siting Report shall identify all right-of-way, existing and proposed, that is needed to accomplish the required storm water treatment and attenuation,***

***floodplain compensation that may be required for the project. Stormwater management facilities shall be designed as aesthetic features in accordance with the Drainage Design Manual criteria. The CONSULTANT Landscape Architect shall work with the design team to address geometric, hardscape and vegetative alternatives that will enhance the aesthetics of the proposed drainage facilities consistent with Highway Beautification Policy.***

***The signed and sealed Pond Siting Report shall be submitted to the FDOT District Drainage Engineer for concurrence prior to Phase III submittal.***

**6a.4 Design of Cross Drains**

Analyze the hydraulic design and performance of cross drains. Check existing cross drains to determine if they are structurally sound and can be extended. Document the design as required. Determine and provide flood data as required**.**

**6a.5 Design of Ditches**

Design roadway conveyance and outfall ditches. This task includes capacity calculations, longitudinal grade adjustments, flow changes, additional adjustments for ditch convergences, selection of suitable channel lining, design of side drain pipes, and documentation. (Design of linear stormwater management facilities in separate task.)

**6a.6 Design of Stormwater Management Facility (Offsite or Infield Pond)**

Design stormwater management facilities to meet requirements for stormwater quality treatment, attenuation and aesthetics. Develop proposed pond layout (contributing drainage basin, shape, contours, slopes, volumes, tie-ins, aesthetics, etc.), perform routing, pollutant/nutrient loading calculations, recovery calculations, design the outlet control structure and buoyancy calculations for pond liners when necessary**.**

**6a.7 Design of Stormwater Management Facility (Roadside Treatment Swales and Linear Ponds)**

Design stormwater management facilities to meet requirements for stormwater quality treatment, attenuation and aesthetics. Develop proposed pond layout (contributing drainage basin, shape, contours, slopes, volumes, tie-ins, aesthetics, etc.), perform routing, pollutant/nutrient loading calculations, recovery calculations and design the outlet control structure**.**

**6a.8 Design of Floodplain Compensation**

Determine floodplain encroachments, coordinate with regulatory agencies, and develop proposed compensation area layout (shape, contours, slopes, volumes, etc.). Document the design following the requirements of the regulatory agency**.**

**6a.9 Design of Storm Drains**

Delineate contributing drainage areas, determine runoff, inlet locations, and spread. Calculate hydraulic losses (friction, utility conflict and, if necessary, minor losses). Determine design tailwater and, if necessary, outlet scour protection**.**

**6a.10 Optional Culvert Material**

Determine acceptable options for pipe materials using the Culvert Service Life Estimator**.**

**6a.11 French Drain Systems**

Design French Drain Systems to provide stormwater treatment and attenuation. Identify location for percolation tests and review these, determine the size and length of French Drains, design the control structure/weir, and model the system of inlets, conveyances, French Drains, and other outfalls using a routing program**.**

**6a.12 Drainage Wells**

Design the discharge into deep wells to comply with regulatory requirements. Identify the location of the well, design the control structure/weir, and model the system using a routing program**.**

**6a.13 Drainage Design Documentation Report**

Compile drainage design documentation into report format. Include documentation for all the drainage design tasks and associated meetings and decisions, except for stand-alone reports, such as the Pond Siting Analysis Report and Bridge Hydraulics Report**.**

**6a.14 Bridge Hydraulic Report**

***If an assigned project is a coastal bridge replacement, coordinate with the District Drainage Engineer to determine if a Coastal Engineering Analysis will be required as specified in Section 4.8.2 of the Drainage Manual.***

Calculate hydrology, hydraulics, deck drainage, scour, and appropriate counter measures. Prepare report and the information for the Bridge Hydraulics Recommendation Sheet**.**

**6a.15 Temporary Drainage Analysis**

Evaluate and address drainage to adequately drain the road and maintain existing offsite drainage during all construction phases. Provide documentation**.**

**6a.16 Quantities for EQ Report**

**6a.17 Cost Estimate**

Prepare cost estimates for the drainage components, except bridges and earthwork for stormwater management and flood compensation sites**.**

**6a.18 Technical Special Provisions and Modified Special Provisions**

**6a.19 Hydroplaning Analysis**

Perform a hydroplaning analysis to assist in the determination of the appropriate roadway geometry for all necessary locations (both typical sections and critical cross

sections) as needed. See the FDOT Hydroplaning Guidance and FDOT FDM Chapters 210 and 211 for more information**.**

**6a.20 Existing Permit Analysis**

**6a.21 Other Drainage Analysis**

**6a.22 Noise Barrier Evaluation**

Evaluate the capacity of drainage openings in noise barriers and locate them to ensure flows are accommodated.

**6a.23 Erosion Control Plan**

**6a.24 Field Reviews**

**6a.25 Technical Meetings**

Meetings with Department staff, regulatory agencies, local governments such as meetings with District Drainage Engineer, the Water Management District, FDEP, etc**.**

**6a.26 Environmental Look-Around Meetings**

Convene a meeting with Department staff, regulatory agencies, local governments and other stakeholders to explore watershed wide stormwater needs and alternative permitting approaches.

**6a.27 Quality Assurance/Quality Control**

**6a.28 Independent Peer Review** (Not applicable to this project)

**6a.29 Supervision**

**6a.30 Coordination**

## 6b DRAINAGE PLANS

The CONSULTANT shall prepare Drainage plan sheets, notes, and details. The plans shall include the following sheets necessary to convey the intent and scope of the project for the purposes of construction.

**6b.1 Drainage Map (Including Interchanges)**

**6b.2 Bridge Hydraulics Recommendation Sheets**

**6b.3 Drainage Structures**

**6b.4 Lateral Ditch Plan/Profile & Cross Sections**

**6b.5 Retention/Detention/Floodplain Compensation Pond Details & Cross Sections**

**6b.6 Erosion Control Plan**

**6b.7 SWPPP**

**6b.8 Quality Assurance/Quality Control**

**6b.9 Supervision**

## 7 UTILITIES

All Utility Coordination activities will be performed by the DEPARTMENT. The CONSULTANT will coordinate with FDOT Area Utility Manager regarding information needed.

### 7.1 Utility Kickoff Meeting

***Before any contact with the UAO(s), the CONSULTANT shall meet or teleconference with the DEPARTMENT's Area Utility Manager to receive guidance, as may be required, to assure that all necessary coordination will be accomplished in accordance with DEPARTMENT procedures. CONSULTANT shall bring a copy of the design project work schedule reflecting utility activities.***

### 7.2 Identify Existing Utility Agency Owner(s)

***The CONSULTANT will identify all utilities in the corridor during the survey phase by calling Sunshine 811. As-built documentation shall be requested from each UAO for verification of complete designation, and a review will be made to ensure that field designated data is included on the Phase I plans. Proper identification of design coordination contact information shall be made during this activity. A copy of the Sunshine 811 "design" ticket listing all utility owners within the project limits shall be provided within 10 business days of the Notice to Proceed (NTP) as part of all subsequent phase submittals.***

***The DEPARTMENT will assist in identifying all utilities in the corridor.***

### 7.3 Make Utility Contacts (To Be Conducted by the DEPARTMENT)

***The DEPARTMENT's Area Utility Manager will make contact and distribute plans to the applicable UAO's. A memo requesting that the UAO's verify/mark all existing facilities will be sent along with the plans.***

### 7.4 Exception Processing

***For above-ground utility installations that are to remain within the horizontal clearance area WITHOUT viable options for relocation within the R/W, the CONSULTANT will be responsible for obtaining Design Exceptions. For above-ground utility installations that are to remain within the horizontal clearance area WITH available R/W and options for relocation, the UAO will be responsible for obtaining Design Exceptions. The DEPARTMENT will coordinate all necessary Utility Exceptions.***

**7.5 Preliminary Utility Meeting**

The DEPARTMENT shall schedule (time and place), notify participants, and conduct a preliminary utility meeting with all affected UAO(s) for the purpose of presenting the project, review the current design schedule, evaluate the utility information collected, provide follow-up information on compensable interest requests, discuss the utility work by highway contractor option with each utility, and discuss any future design issues that may impact utilities. This is also an opportunity for the UAO(s) to present proposed facility ***relocations with the CONSULTANT and other UAOs***. The CONSULTANT shall keep accurate minutes and distribute a copy to all attendees.

**7.6 Individual/Field Meetings**

***The CONSULTANT shall meet with each UAO as necessary, separately or together, throughout the project design duration to provide guidance in the interpretation of plans, review changes to the plans and schedules, standard or selective clearing and grubbing work, and assist in the development of the UAO(s) plans and work schedules. The CONSULTANT is responsible for motivating the UAO to complete and return the necessary documents after each Utility Contact or Meeting. Field reviews shall be coordinated with the DEPARTMENT's Area Utility Manager.***

**7.7 Collect and Review Plans and Data from UAO(s)**

***The CONSULTANT will be responsible for reviewing and implementing identified utility locations into the plans as well as producing a Potential Utility Conflict Matrix. The Matrix will include location (station, offset, depth) of existing facilities in relation to proposed construction features, and will be submitted with the Phase II submittal. Subsequent phase submittals will require that the Utility Conflict Matrix be updated and submitted reflecting any design changes or new information. Marked plans provided from UAOs may need to be acquired through the Department's Project Suite Enterprise Edition (PSEE) system.***

**7.8 Subordination of Easements Coordination** (To Be Conducted by the DEPARTMENT)

The CONSULTANT, if requested by the DEPARTMENT, shall transmit to and secure from the UAO the executed subordination agreements prepared by the appropriate DEPARTMENT office. The CONSULTANT shall ***obtain information as required from the UAO(s) for*** the programming of the necessary work program funds to compensate the UAO ***for reimbursable expenses***.

**7.9 Utility Design Meeting**

***The DEPARTMENT's Area Utility Manager shall coordinate with the DEPARTMENT's Design Project Manager and schedule (time and place), notify participants, and conduct a Utility Design Meeting with all affected UAO(s). This meeting may be held in conjunction with the Post 60% Workshop described in Section 4.21. The CONSULTANT shall schedule (time and place), notify participants, and conduct a Utility meeting with all affected UAO(s). The***

***CONSULTANT shall be prepared to discuss impacts to existing trees/vegetation and proposed landscape, drainage, traffic signalization, temporary traffic control plan (construction phasing), review the current design schedule and letting date, evaluate the utility information collected, provide follow-up information on compensable property rights from FDOT Legal Office, discuss with each UAO the utility work by highway contractor option, discuss any future design issues that may impact utilities, etc., to the extent that they may have an effect on existing or proposed utility facilities with particular emphasis on drainage and TTCP with each UAO. The intent of this meeting shall be to assist the UAOs in identifying and resolving conflicts between utilities and proposed construction before completion of the plans, including utility adjustment details. Also to work with the UAOs to recommend potential resolution between known utility conflicts with proposed construction plans as may be deemed practical by the UAO. The CONSULTANT shall keep accurate minutes of all meetings and distribute a copy to all attendees within 3 days. See Task 4.5 (Horizontal/Vertical Master Design File) and Task 4.8 (Cross Section Design Files) for utility conflict location identification and adjustments.***

**7.10 Review Utility Markups & Work Schedules and Processing of Schedules & Agreements**

***The CONSULTANT is to review the UAO marked up plans and the Utility Work Schedules as they are received and assure that they are compatible with the proposed design features in the plans. The CONSULTANT shall review the specific details of the markups and schedules with the Area Utility Manager as required to finalize the status of each potential conflict. Send color markups and schedules to the appropriate DEPARTMENT office(s) such as survey, geotechnical, drainage, structures, lighting, roadway, signals, utilities, landscape architecture, municipalities, maintaining agency, and District Traffic Operations for review and comment if required by the District. The CONSULTANT shall also verify that the schedules conform to the construction phasing and ~~MOT~~ TTCP sequences. Coordinate with the District for execution. Distribute Executed Final Documents. Prepare Work Order for UAO(s). The CONSULTANT shall coordinate with the DUO the programming of necessary Work Program funds. Any design changes affecting utilities that occur after the Phase IV Resubmittal must be submitted to the DEPARTMENT's Area Utility Manager so that Utility Work Schedules can be updated.***

**7.11 Utility Coordination/Follow-up**

***Utility Coordination and Follow-up activities will be performed by the DEPARTMENT and the CONSULTANT if requested by the DEPARTMENT.***

This includes follow-up, interpreting plans, and assisting ***with coordination of*** the completion of the UAO(s) work schedule and agreements. Includes phone calls, face-to-face meetings, etc., to motivate and ensure the UAO(s) complete and return the required documents in accordance with the project schedule. Ensure the resolution of all known conflicts. This task can be applied to all phases of the project.

**7.12 Utility Constructability Review**

***Utility Constructability Review activities will be performed by the CONSULTANT. The CONSULTANT shall review utility work schedules against construction contract time, and phasing for compatibility. Coordinate with and obtain concurrence from the construction office. See Task 4.5 (Horizontal/Vertical Master Design File) and Task 4.9 (Cross Section Design Files) for utility conflict identification and adjustments.***

**7.13 Additional Utility Services**

***The CONSULTANT will provide any subsurface utility excavations (SUE) that are required for the projects. This effort will be negotiated in Section 27.10.***

***The CONSULTANT may be required to provide additional utility services. Additional services will be determined when the services are required and requested. This item is not usually included in the scope at the time of negotiation. It is normally added as a supplemental amendment when the need is identified.***

**7.14 Processing Utility Work by Highway Contractor (UWHC)** (To Be Conducted by the DEPARTMENT)

***Processing of any Utility Work by the Highway Contractor will be performed by the DEPARTMENT.***

***As directed by the DEPARTMENT, the CONSULTANT shall assist with the determination of the*** DEPARTMENT's cost participation, ***attend*** additional coordination meetings, prepare, negotiate, and process ***UWHC*** agreements, review tabulation of quantities ***prepared by the UAO(s)***, prepare Summary of Pay Items (Project Preconstruction (PrP)) ***for*** UWHC ***items***, perform UWHC constructability and bidability reviews, ***and review and incorporate*** Technical Special Provisions (TSPs). This does not include utility design effort. This item is not usually included in the scope at the time of negotiation. It is normally added as a supplemental agreement when the need is identified.

**7.15 Contract Plans to UAO(s)**

***The CONSULTANT will be responsible for providing the necessary electronic files to the DEPARTMENT's Design Project Manager for submittal to the Area Utility Manager at each Phase Submittal, including the final bid contract plans as processed for letting.***

**7.16 Certification/Close-Out (To Be Conducted by the DEPARTMENT)**

***Utility Certification will be performed after all Utility Work Schedules have been executed and the coordination of construction related issues has been completed by the DEPARTMENT.***

***Utility Coordination Close-Out will include archiving all project documents and files in an orderly fashion consistent with the DEPARTMENT's EDMS archiving process.***

**7.17 Other Utilities**

## 8 ENVIRONMENTAL PERMITS, COMPLIANCE AND CLEARANCES

The CONSULTANT shall notify the DEPARTMENT Project Manager, Environmental Permit Coordinator and other appropriate personnel in advance of all scheduled meetings with the regulatory agencies to allow a DEPARTMENT representative to attend. The CONSULTANT shall copy in the Project Manager and the Environmental Permit Coordinator on all permit related correspondence and meetings. The Consultant shall use current regulatory guidelines and policies for all permits required as identified in Section 2.4.

### 8.1 Preliminary Project Research

The CONSULTANT shall perform preliminary project research and shall be responsible for regulatory agency coordination to assure that design efforts are properly directed toward permit requirements.

The CONSULTANT shall research any existing easements or other restrictions that may exist both within or adjacent to the proposed project boundary. Project research may include but should not be limited to review of available: federal, state, and local permit files and databases; and local government information including county and property appraiser data. The CONSULTANT shall coordinate with the DEPARTMENT's Design Project Manager and the DEPARTMENT's Right of Way Mapping Office to determine if any Sovereign Submerged Lands easements need to be acquired. Any applicable information will be shown on the plans as appropriate.

***Reference Section 29.23 for additional information regarding TIITF easements.***

### 8.2 Field Work

***8.2.1 Pond Site Alternatives: The CONSULTANT shall review alternative pond sites as directed by the DEPARTMENT and information shall be included in the Pond Siting Report.***

***8.2.2 Establish Wetland Jurisdictional Lines and Assessments:***

The CONSULTANT shall be responsible for, but not limited to, the following activities:

- Determine landward extent of wetlands and other surface waters as defined in Rule Chapter 62-340, F.A.C., as ratified in Section 373.4211, F.S.
- Collect all data and information necessary to determine the jurisdictional boundaries of wetlands and other surface waters as defined by the rules or regulations of each permitting agency processing a DEPARTMENT permit application for the project.
- Set seasonal high water levels
- Obtain a jurisdictional determination as defined by the rules or regulations of each permitting agency processing a DEPARTMENT permit application for the project.
- Prepare aerial maps showing the jurisdictional boundaries of wetlands and other

surface waters. Aerial maps shall be reproducible, of a scale of 1″=400' or more detailed and be recent photography. The maps shall show the jurisdictional boundaries of each agency. Photo copies of aerials are not acceptable. When necessary, a wetland specific survey will be prepared by a registered surveyor and mapper. All surveyed jurisdictional boundaries are to be tied to the project's baseline of survey.

- Prepare a written assessment of the current condition and functional value of the wetlands and other surface waters. Prepare data in tabular form which includes the ID number for each wetland (and other surface water, if necessary) impacted, size of wetland to be impacted, type of impact, and identify any wetland (by ID number and size) within the project limits that will not be impacted by the project.
- Prepare appropriate agency forms to obtain required permits. Forms may include but are not limited to the United States Army Corps of Engineers (USACE) "Wetland Determination Data Form – Atlantic and Gulf Coastal Plain Region"; the USACE "Approved Jurisdictional Determination Form"; Uniform Mitigation Assessment Method forms and/or project specific data forms.

***8.2.3 Species Surveys:*** The CONSULTANT shall conduct Wildlife surveys as defined by rules or regulations of any permitting agency, or commenting agency that is processing a DEPARTMENT permit.

## 8.3 Agency Verification of Wetland Data

The CONSULTANT shall be responsible for verification of wetland and other surface water data identified in Section 8.2 and coordinating regulatory agency field reviews, including finalization of assessments and jurisdictional determinations with applicable agencies.

***The jurisdictional lines will be verified during the permit submittal and review by the State or Federal agency. A formal jurisdictional determination will not be obtained prior to permit submittal except for new roadway alignments, or if a questionable determination is anticipated.***

## 8.4 Complete and Submit All Required Permit Applications

The CONSULTANT shall collect all of the data and information necessary to prepare the permit applications and obtain the environmental permits required to construct the project as identified in the Project Description and as described in 8.4.1, 8.4.2, and 8.12 (Other Permits). The CONSULTANT shall prepare each permit application in accordance with the rules and/or regulations of the regulatory agency responsible for issuing a specific permit and/or authorization to perform work. The permit application packages must be approved by the DEPARTMENT prior to submittal to regulatory agencies.

The CONSULTANT will submit all permit applications, as directed by the DEPARTMENT, and be responsible for payment of all permit and public noticing fees, unless directed otherwise by the DEPARTMENT.

***A Pre-Application meeting with the permitting agencies can be anticipated for projects that require an Individual ERP from the State of Florida or an Individual Permit from the Army Corps of Engineers. As a project develops, other project specific conditions may be identified that will warrant a Pre-Application meeting to clarify the permitting requirements. The DEPARTMENT's Design Project Manager, District Drainage Engineer, and District Permit Coordinator will be invited to the Pre-Application meeting (when required) and will be forwarded all correspondence and meeting minutes. For projects within the jurisdiction of Leon County, or the City of Tallahassee, the District Permit Coordinator and the District Drainage Engineer will be coordinated with before any permit application is submitted; and before any meetings with said agencies. The DEPARTMENT wants to be fully involved and to give proper direction to the CONSULTANT regarding permitting in Leon County and the City of Tallahassee***.

***The CONSULTANT will file any public notices required by the permits, in a publication selected by the DEPARTMENT, and will be responsible for payment of all fees associated with the filing the public notice.***

***The CONSULTANT shall be responsible for responding to Requests for Additional Information by the reviewing agency***.

***8.4.1 Complete and Submit all Required Wetland Permit Applications:***

The CONSULTANT shall prepare, complete, and submit required wetland permit (i.e., ERP, Section 404) application packages to the appropriate regulatory agencies. This includes, but is not limited to, applications submitted to WMDs and/or DEP, and USACE. The application package may include but is not limited to attachments (i.e., project location map, aerials, affidavit of ownership, pictures, additional technical analysis, etc.), a cover letter with project description as well as completion of applicable agency forms. The CONSULTANT shall prepare and respond to agency Requests for Additional Information (RAIs), including necessary revisions to the application package. All responses and completed application packages must be approved by the District Permit Coordinator prior to submittal to the regulatory agencies. Geotechnical permitting should also be prepared, submitted, and obtained.

***For projects that do not have a wetland assessment (Unified Mitigation Assessment Method, or UMAM), and the permit requires this information to be issued, the CONSULTANT will prepare a UMAM to be submitted with the permit application.***

***8.4.2 Complete and Submit all Species Permit Applications:***

***If applicable, this task will be completed by the DEPARTMENT.***

**8.5 Coordinate and Review Dredge and Fill Sketches**

The CONSULTANT shall review Dredge and Fill Detail sheets to ensure information on the sketch(es) meet the requirements of the regulatory agencies and are appropriate for environmental permit application submittal and acquisition. The CONSULATANT will also provide environmental data/information as needed to support the preparation of the Dredge and Fill sketches.

### 8.6 Prepare USCG Permit Sketches

The CONSULTANT shall be responsible for the level of effort needed for the USCG authorization in accordance with the regulatory agency requirements.

#### 8.6.1 Prepare and submit required documents for USCG Coordination

#### 8.6.2 Complete and submit USCG Bridge Permit Application

### 8.7 Prepare Water Management District or Local Water Control District Right of Way Occupancy Permit Application

The CONSULTANT shall be responsible for the preparation of the ROW Occupancy permit application in accordance with the regulatory agency requirements. The CONSULTANT shall be responsible for acquiring the ROW Occupancy permit.

### 8.8 Prepare Coastal Construction Control Line (CCCL) Permit Application

The CONSULTANT shall be responsible for the preparation of the CCCL permit application and acquire the final "Notice to Proceed" authorization from the Florida Department of Environmental Protection (FDEP). Legal advertisements shall be published one time in a newspaper that meets the notification requirements of the FDEP.

### 8.9 Prepare USACE Section 408 Application to Alter a Civil Works Project

The CONSULTANT shall be responsible for the preparation of the Section 408 (33 USC 408) application and obtaining Section 408 permission.

### 8.10 Compensatory Mitigation Design

If impacts cannot be avoided, the CONSULTANT shall prepare a mitigation plan to be included as a part of the application(s).

Prior to the development of mitigation alternatives, the CONSULTANT shall meet with the Project Manager and Environmental Permit Coordinator to determine the DEPARTMENT's policies in proposing mitigation. The CONSULTANT shall develop a mitigation plan based upon the general guidelines provided by the DEPARTMENT.

The CONSULTANT will be directed by the DEPARTMENT to investigate the mitigation options that meet federal and state requirements in accordance with section 373.4137, F.S. Below are mitigation options:

- Purchase of mitigation credits from a mitigation bank
- Payment to DEP/WMD for mitigation services
- Monetary participation in offsite regional mitigation plans
- Creation/restoration of wetlands

In the event that physical creation or restoration is the only feasible alternative to

offset wetland impacts, the CONSULTANT shall collect all of the data and information necessary to prepare mitigation plans acceptable to all permitting agencies and commenting agencies who are processing or reviewing a permit application for a DEPARTMENT project.

Prior to selection of a final creation/restoration mitigation site, the CONSULTANT will provide the following services in the development of a mitigation plan:

- Preliminary jurisdictional determination for each proposed site
- Selection of alternative sites
- Coordination of alternative sites with the DEPARTMENT/all environmental agencies
- Written narrative listing potential sites with justifications for both recommended and non-recommended sites.

**8.11 Mitigation Coordination and Meetings**

The CONSULTANT shall coordinate with DEPARTMENT personnel prior to approaching any environmental permitting or commenting agencies. The CONSULTANT will provide mitigation information needed to update the FDOT Environmental Impact Inventory.

***If it is determined at the Pre-Application meeting that wetland mitigation is required, the CONSULTANT shall ~~a~~ submit the UMAM (completed in Section 8.4.1) including the Mitigation Determination Formulas and mitigation options for the project area to the Department***

**8.12 Regulatory Agency Support**

The CONSULTANT shall provide regulatory agency support which may include but is not limited to preparing: a Statement of Findings or Memorandum for the Record; Public Notice; Findings of Fact; and Biological Opinion.

**ENVIRONMENTAL CLEARANCES, RE-EVALUATIONS, AND TECHNICAL SUPPORT**

**8.13 Technical Support to the DEPARTMENT for Environmental Clearances and Re-evaluations**

***The CONSULTANT shall provide engineering and environmental support for the DEPARTMENT to obtain environmental clearances resulting from any changes to the project after the initial environmental phase has been completed.***

**8.14 Preparation of Environmental Clearances and Re-evaluations (TO BE PROVIDED BY THE DEPARTMENT)**

**8.15 Contamination Impact Analysis** (Not applicable to this project)

**8.16 Asbestos Survey** (Not applicable to this project)

**8.17 Technical Meetings**

**8.18 Quality Assurance/Quality Control**

**8.19 Supervision**

**8.20 Coordination**

## 9 STRUCTURES - SUMMARY AND MISCELLANEOUS TASKS AND DRAWINGS

The CONSULTANT shall analyze, design, and develop contract documents for all structures in accordance with applicable provisions as defined in ***Section 2.21***, Provisions for Work. Individual tasks identified in Sections 9 through 18 are defined in the Staff Hour Estimation Handbook and within the provision defined in ***Section 2.21***, Provisions for Work. Contract documents shall display economical solutions for the given conditions.

The CONSULTANT shall provide Design Documentation to the DEPARTMENT with each submittal consisting of structural design calculations and other supporting documentation developed during the development of the plans. The design calculations submitted shall adequately address the complete design of all structural elements. These calculations shall be neatly and logically presented on digital media or, at the DEPARTMENT's request, on 8 ½″x11″ paper and all sheets shall be numbered. The final design calculations shall be signed and sealed by a Florida-licensed professional engineer. A cover sheet indexing the contents of the calculations shall be included and the engineer shall sign and seal that sheet. All computer programs and parameters used in the design calculations shall include sufficient backup information to facilitate the review task.

**9.1 Key Sheet and Index of Drawings**

**9.2 Project Layout**

**9.3 General Notes and Bid Item Notes**

***The CONSULTANT shall provide adequate plan details to accommodate bridge joint replacement on bridges with asphalt overlays that will require resurfacing.***

**9.4 Miscellaneous Common Details**

***The CONSULTANT shall provide adequate plan details to accommodate bridge joint replacement on bridges with asphalt overlays that will require resurfacing***

**9.5 Incorporate Report of Core Borings**

**9.6 Design Standards – Bridges**

**9.7 Existing Bridge Plans**

**9.8 Assemble Plan Summary Boxes and Quantities**

**9.9 Cost Estimate**

**9.10 Technical Special Provisions and Modified Special Provisions**

**9.11 Field Reviews**

**9.12 Technical Meetings**

**9.13 Quality Assurance/Quality Control**

**9.14 Independent Peer Review** (Not applicable to this project)

**9.15 Supervision**

**9.16 Coordination**

## 10 STRUCTURES - BRIDGE DEVELOPMENT REPORT

The Consultant shall prepare a Bridge Development Report (BDR). The BDR shall be submitted as part of the Phase I Roadway Submittal, General Requirements.

**General Requirements**

**10.1 Bridge Geometry**

**10.2 Ship Impact Data Collection (Not applicable for these projects)**

**10.3 Ship Impact Criteria (Not applicable for these projects)**

**Superstructure Alternatives**

**10.4 Short-Span Concrete**

**10.5 Medium-Span Concrete (Not applicable for these projects)**

**10.6 Long Span Concrete (Not applicable for these projects)**

**10.7 Structural Steel (Not applicable for these projects)**

**Foundation and Substructure Alternatives**

**10.8 Pier/Bent**

**10.9 Shallow Foundations / GRS Abutments**

***For single span bridge designs, this task includes the efforts necessary to evaluate the suitability of Geosynthetic Reinforced Soil (GRS) Walls and Abutments.***

**10.10 Deep Foundations**

**Movable Span and tasks 10.11 – 10.23 are not applicable to these projects.**

**Other BDR Issues**

**10.24 Aesthetics (Not applicable for these projects)**

**10.25 TCP/Staged Construction Requirements (Not applicable for these projects)**

**10.26 Constructability Requirements**

**10.27 Load Rating for Damaged/Widened Structures (Not applicable for these projects)**

**10.28 Quantity and Cost Estimates**

**10.29 Quantity and Cost Estimates - Movable Span (Not applicable for these projects)**

**10.30 Wall Type Justification (Not applicable for these projects)**

**Report Preparation**

**10.31 Exhibits**

**10.32 Exhibits - Movable Span (Not applicable for these projects)**

**10.33 Report Preparation**

**10.34 Report Preparation - Movable Span (Not applicable for these projects)**

**10.35 BDR Submittal Package**

## 11 STRUCTURES - TEMPORARY BRIDGE and tasks 11.1 – 11.8 are not applicable to this project.

## 12 STRUCTURES - SHORT SPAN CONCRETE BRIDGE

The CONSULTANT shall prepare plans for Short Span Concrete Bridge(s) at the location(s) specified in Section 2.5.

**General Layout Design and Plans**

**12.1 Overall Bridge Final Geometry**

**12.2 Expansion/Contraction Analysis**

**12.3 General Plan and Elevation**

**12.4 Construction Staging**

**12.5 Approach Slab Plan and Details**

**12.6 Miscellaneous Details**

**End Bent Design and Plans**

**12.7 End Bent Geometry**

**12.8 End Bent Structural Design**

**12.9 End Bent Plan and Elevation**

**12.10 End Bent Details**

**Intermediate Bent Design and Plans**

**12.11 Bent Geometry**

**12.12 Bent Stability Analysis**

**12.13 Bent Structural Design**

**12.14 Bent Plan and Elevation**

**12.15 Bent Details**

**Miscellaneous Substructure Design and Plans**

**12.16 Foundation Layout**

**Superstructure Design and Plans**

**12.17 Finish Grade Elevation Calculation**

**12.18 Finish Grade Elevations**

**Cast-In-Place Slab Bridges**

**12.19 Bridge Deck Design**

**12.20 Superstructure Plan**

**12.21 Superstructure Sections and Details**

**Prestressed Slab Unit Bridges**

**12.22 Prestressed Slab Unit Design**

**12.23 Prestressed Slab Unit Layout**

**12.24 Prestressed Slab Unit Details and Schedule**

**12.25 Deck Topping Reinforcing Layout**

**12.26 Superstructure Sections and Details**

**Reinforcing Bar Lists**

**12.27 Preparation of Reinforcing Bar List**

**Load Rating**

**12.28 Load Rating**

**13 STRUCTURES - MEDIUM SPAN CONCRETE BRIDGE and tasks 13.1 – 13. 55 are not applicable to this project.**

**14 STRUCTURES - STRUCTURAL STEEL BRIDGE and tasks 14.1 – 14.62 are not applicable to this project.**

**15 STRUCTURES - SEGMENTAL CONCRETE BRIDGE and tasks 15.1 – 15.77 are not applicable to this project.**

**16 STRUCTURES - MOVABLE SPAN and tasks 16.1 – 16.102 are not applicable to this project.**

**17 STRUCTURES - RETAINING WALL**

The CONSULTANT shall prepare plans for Retaining Wall(s) as specified in Section 2.5.

**General Requirements**

**17.1 Key Sheets**

**17.2 Horizontal Wall Geometry**

**Permanent Proprietary Walls**

**17.3 Vertical Wall Geometry**

**17.4 Semi-Standard Drawings**

**17.5 Wall Plan and Elevations (Control Drawings)**

**17.6 Details**

**Temporary Proprietary Walls**

**17.7 Vertical Wall Geometry**

**17.8 Semi-Standard Drawings**

**17.9 Wall Plan and Elevations (Control Drawings)**

**17.10 Details**

**Cast-In-Place Retaining Walls**

**17.11 Design**

**17.12 Vertical Wall Geometry**

**17.13 General Notes**

**17.14 Wall Plan and Elevations (Control Drawings)**

**17.15 Sections and Details**

**17.16 Reinforcing Bar List**

**Other Retaining Walls and Bulkheads**

**17.17 Design**

**17.18 Vertical Wall Geometry**

**17.19 General Notes, Tables and Miscellaneous Details**

**17.20 Wall Plan and Elevations**

**17.21 Details**

## 18 STRUCTURES - MISCELLANEOUS

The CONSULTANT shall prepare plans for Miscellaneous Structure(s) as specified in Section 2.5.

**Concrete Box Culverts**

**18.1 Concrete Box Culverts**

**18.2 Concrete Box Culverts Extensions**

**18.3 Concrete Box Culvert Data Table Plan Sheets**

**18.4 Concrete Box Culvert Special Details Plan Sheets**

**Strain Poles**

**18.5 Steel Strain Poles**

**18.6 Concrete Strain Poles**

**18.7 Strain Pole Data Table Plan Sheets**

**18.8 Strain Pole Special Details Plan Sheets**

**Mast Arms**

**18.9 Mast Arms**

**18.10 Mast Arms Data Table Plan Sheets**

**18.11 Mast Arms Special Details Plan Sheets**

**Overhead/Cantilever Sign Structure**

**18.12 Cantilever Sign Structures**

**18.13 Overhead Span Sign Structures**

**18.14 Special (Long Span) Overhead Sign Structures**

**18.15 Monotube Overhead Sign Structure**

**18.16 Bridge Mounted Signs (Attached to Superstructure)**

**18.17 Overhead/Cantilever Sign Structures Data Table Plan Sheets**

**18.18 Overhead/Cantilever Sign Structures Special Details Plan Sheets**

**High Mast Lighting**

**18.19 Non-Standard High Mast Lighting Structures**

**18.20 High Mast Lighting Special Details Plan Sheets**

**Noise Barrier Walls (Ground Mount)**

**18.21 Horizontal Wall Geometry**

**18.22 Vertical Wall Geometry**

**18.23 Summary of Quantities – Aesthetic Requirements**

**18.24 Control Drawings**

**18.25 Design of Noise Barrier Walls Covered by Standards**

**18.26 Design of Noise Barrier Walls not Covered by Standards**

**18.27 Aesthetic Details**

**Special Structures**

**18.28 Fender System**

**18.29 Fender System Access**

**18.30 Special Structures**

**18.31 Other Structures**

**18.32 Condition Evaluation of Signal and Sign Structures, and High Mast Light Poles**

**18.33 Condition Evaluation of Signal and Sign Structures, and High Mast Light Poles (No As built or Design Plans Available)**

**18.34 Analytical Evaluation of Signal and Sign Structures, and High Mast Light Poles**

**18.35 Ancillary Structures Report**

## 19 SIGNING AND PAVEMENT MARKING ANALYSIS

The CONSULTANT shall analyze and document Signing and Pavement Markings Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums.

### 19.1 Traffic Data Analysis

The CONSULTANT shall review the approved preliminary engineering report, typical section package, traffic technical memorandum and proposed geometric design alignment to identify proposed sign placements and roadway markings. Perform queue analysis.

***The CONSULTANT shall evaluate the existing signage to determine the need for additional signs, correcting redundant or conflicting signage, and the replacement of damaged signs. It is NOT the DEPARTMENT's intent to replace signs based solely on age or installation date. Existing signage problems/issues that are discovered during the design phase should be communicated to the maintaining agency to be addressed as appropriate.***

The CONSULTANT shall prepare a detailed summary of additional or modified traffic regulations affected by this project. The summary shall include affected regulatory signs (No U, No Left, No Parking etc.), signals (including school zones,

pedestrian devices, intersection control beacons, post-mounted warning devices) or pavement markings. This information is to be forwarded to the District Traffic Operations Engineer for use in fulfilling Florida Statute 335.10(1). The CONSULTANT may refer to Traffic Engineering Topic Number 750-010-011: Traffic Regulation Approval Process, and the Roadway Characteristic Inventory (RCI) database for additional information.

**19.2 No Passing Zone Study**

The CONSULTANT shall perform all effort required for field data collection, and investigation in accordance with the DEPARTMENT's Manual on Uniform Traffic Studies.

The CONSULTANT shall submit the signed and sealed report to the DEPARTMENT for review and approval.

**19.3 Signing and Pavement Marking Master Design File**

The CONSULTANT shall prepare the Signing & Marking Design file to include all necessary design elements and all associated reference files.

**19.4 Multi-Post Sign Support Calculations**

The CONSULTANT shall determine the appropriate column size from the DEPARTMENT's Multi-Post Sign Program(s).

**19.5 Sign Panel Design Analysis**

Establish sign layout, letter size and series for non-standard signs.

**19.6 Sign Lighting/Electrical Calculations**

***The CONSULTANT shall analyze and document Lighting/Electrical Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums.***

***The CONSULTANT shall prepare a photometric analysis to be submitted as part of the Lighting Design Analysis Report. An analysis shall be provided for each new and/or modified sign panel which requires lighting.***

***The Consultant shall submit voltage drop calculations and load analysis for each new and/or modified sign panel which requires lighting.***

**19.7 Quantities for EQ Report**

***Quantities shall be included in an Estimated Quantities Report per FDM 902.***

***The CONSULTANT shall be responsible for inputting pay items and quantities into the DEPARTMENT's Project Preconstruction (PrP) System through the use of the DEPARTMENT's Designer Interface.***

***Phase I - The project shall be established in PrP by Phase I (30%). The District Preliminary Estimates Office will create the project(s) in the system upon receiving a copy of the Notice to Proceed for the design contract.***

***Phase II - A Summary of Pay Items sheet shall be prepared with Phase II and subsequent plans submittals. The Phase II (60%) submittal shall have all pay items identified with or without quantities. If quantities have not been determined at this point, the CONSULTANT shall load a quantity of "1.0".***

***Phases III & IV - At Phase III (90%) the CONSULTANT shall have all quantities loaded into PrP, with only minor change anticipated at subsequent submittals. Within PrP, the CONSULTANT shall run a Project Edit Report for the project at Phases III and IV just prior to submitting the plans to the DEPARTMENT for review. This program outputs invalid pay items that may be erroneously loaded for a project. The above shall be provided for each component set of plans (i.e., Roadway, Bridge, Signing and Marking, etc.).***

**19.8 Cost Estimate**

**19.9 Technical Special Provisions and Modified Special Provisions**

**19.10 Other Signing and Pavement Marking Analysis**

***Audible and Vibratory Markings Recommendation (if applicable): Provide the DEPARTMENT's Design Project Manager with an explanation of crash history, treatment recommendations, and a *.kmz graphically representing proposed audible and vibratory treatment to pursue approval from the District Design Office.***

**19.11 Field Reviews**

**19.12 Technical Meetings**

**19.13 Quality Assurance/Quality Control**

**19.14 Independent Peer Review** (Not applicable to this project)

**19.15 Supervision**

**19.16 Coordination**

## 20 SIGNING AND PAVEMENT MARKING PLANS

The CONSULTANT shall prepare a set of Signing and Pavement Marking Plans in accordance with the Plans Preparation Manual that includes the following. ***The plans shall include only those sheets, of the following list of sheets, necessary to convey the intent and scope of the project for construction.***

**20.1 Key Sheet**

**20.2 General Notes/Pay Item Notes**

**20.3 Project Layout**

**20.4 Plan Sheet**

**20.5 Typical Details**

**20.6 Guide Sign Work Sheet(s)**

**20.7 Traffic Monitoring Site**

**20.8 Cross Sections**

**20.9 Special Service Point Details**

**20.10 Special Details**

**20.11 Interim Standards**

**20.12 Quality Assurance/Quality Control**

***The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of traffic design drawings, specifications and other services furnished by the CONSULTANT under this contract.***

***The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all design drawings, specifications and other services prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or it may be one specifically designed for this project.***

**20.13 Supervision**

## 21 SIGNALIZATION ANALYSIS

The CONSULTANT shall analyze and document Signalization Analysis Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums.

**21.1 Traffic Data Collection**

The CONSULTANT shall perform all effort required as applicable for traffic data collection for the purposes of providing signal design related services as described in this scope of services. This effort may include collecting crash reports, 24 hr.

machine counts, 8 hr. turning movement counts, 7 day machine counts, and speed & delay studies.

**21.2 Traffic Data Analysis**

***As applicable for the purposes of providing signal design related services as described in this scope of services,*** the CONSULTANT shall determine signal operation plan, intersection geometry, local signal timings, pre-emption phasing & timings, forecasting traffic, and intersection analysis run.

**21.3 Signal Warrant Study**

**21.4 Systems Timings**

The CONSULTANT shall determine proper coordination timing plans including splits, force offs, offsets, and preparation of Time Space Diagram.

**21.5 Reference and Master Signalization Design File**

The CONSULTANT shall prepare the Signalization Design file to include all necessary design elements and all associated reference files.

**21.6 Reference and Master Interconnect Communication Design File**

The CONSULTANT shall prepare the Interconnect Communication Design file to include all necessary design elements and all associated reference files.

**21.7 Overhead Street Name Sign Design**

The CONSULTANT shall design Signal Mounted Overhead Street Name signs.

**21.8 Pole Elevation Analysis**

**21.9 Traffic Signal Operation Report**

**21.10 Quantities for EQ Report**

***Quantities shall be included in an Estimated Quantities Report per FDM 902.***

***The CONSULTANT shall be responsible for inputting pay items and quantities into the DEPARTMENT's Project Preconstruction (PrP) System through the use of the DEPARTMENT's Designer Interface.***

***Phase I - The project shall be established in PrP by Phase I (30%). The District Preliminary Estimates Office will create the project(s) in the system upon receiving a copy of the Notice to Proceed for the design contract.***

***Phase II - A Summary of Pay Items sheet shall be prepared with Phase II and subsequent plans submittals. The Phase II (60%) submittal shall have all pay items identified with or without quantities. If quantities have not been determined at this***

***point, the CONSULTANT shall load a quantity of "1.0".***

***Phases III & IV - At Phase III (90%) the CONSULTANT shall have all quantities loaded into PrP, with only minor change anticipated at subsequent submittals. Within PrP, the CONSULTANT shall run a Project Edit Report for the project at Phases III and IV just prior to submitting the plans to the DEPARTMENT for review. This program outputs invalid pay items that may be erroneously loaded for a project. The above shall be provided for each component set of plans (i.e., Roadway, Bridge, Signing and Marking, etc.).***

**21.11 Cost Estimate**

**21.12 Technical Special Provisions and Modified Special Provisions**

**21.13 Other Signalization Analysis**

**21.14 Field Reviews**

The CONSULTANT shall collect information from the maintaining agencies and conduct a field review. The review should include, but is not limited to, the following:

- Existing Signal and Pedestrian Phasing
- Controller Make, Model, Capabilities and Condition/Age
- Condition of Signal Structure(s)
- Type of Detection as Compared With Current District Standards
- Interconnect Media
- Controller Timing Data

**21.15 Technical Meetings**

**21.16 Quality Assurance/Quality Control**

***The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of traffic design drawings, specifications and other services furnished by the CONSULTANT under this contract.***

***The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all design drawings, specifications and other services prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or it may be one specifically designed for this project.***

**21.17 Independent Peer Review** (Not applicable to this project)

**21.18 Supervision**

**21.19 Coordination**

## 22 SIGNALIZATION PLANS

The CONSULTANT shall prepare a set of Signalization Plans in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums, which includes the following:

**22.1 Key Sheet**

**22.2 General Notes/Pay Item Notes**

**22.3 Plan Sheet**

**22.4 Interconnect Plans**

**22.5 Traffic Monitoring Site**

**22.6 Guide Sign Worksheet**

**22.7 Special Details**

**22.8 Special Service Point Details**

**22.9 Mast Arm/Monotube Tabulation Sheet**

**22.10 Strain Pole Schedule**

**22.11 TTCP Signal (Temporary)**

**22.12 Temporary Detection Sheet**

**22.13 Utility Conflict Sheet**

**22.14 Interim Standards**

**22.15 Quality Assurance/Quality Control**

***The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of traffic design drawings, specifications and other services furnished by the CONSULTANT under this contract.***

***The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all design drawings, specifications and other services prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or it may be one specifically designed for this project.***

### 22.16 Supervision

## 23 LIGHTING ANALYSIS

The CONSULTANT shall analyze and document Lighting Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums.

***The CONSULTANT is expected to coordinate closely with the DEPARTMENT's Area Utility Manager and the area power provider in order to maximize the use of the UAO's poles and service. The DEPARTMENT's preference is for the UAO to install and maintain the necessary lights as specified by the CONSULTANT.***

### 23.1 Lighting Justification Report

***The CONSULTANT shall prepare a Lighting Justification Report. The report shall be submitted under a separate cover with the Phase I plans submittal, titled Lighting Justification Report. The report shall provide analyses for mainlines, interchanges, and arterial roads and shall include all back-up data such that the report stands on its own. Back up data shall include current ADT's, general crash data average cost from the Florida Highway Safety Improvement Manual, crash details data from the last three years, and preliminary lighting calculations.***

***The report shall address warrants to determine if lighting warrants are met, and shall include a benefit-cost analysis to determine if lighting is justified. The report shall include calculations for the night-to-day crash ratio as well as a table summarizing the day-time and the night-time crashes. The report shall follow the procedures outlined in the FDOT Manual on Uniform Traffic Studies (MUTS) manual which utilize ADT, Three Year Crash Data, night/day crash ratio, percentage of night ADT, etc.***

The report shall also include the lighting calculations for each lighted sign.

After approval of the preliminary report, the consultant shall submit a revised report for each submittal. The Lighting Design Analysis Report shall include:

Voltage drop calculations

Load analysis calculations for each branch circuit

### 23.2 Lighting Design Analysis Report (LDAR)

The CONSULTANT shall prepare a Preliminary Lighting Design Analysis Report in accordance with the requirements of the FDOT Design Manual. The report shall be submitted under a separate cover with the Phase II plans submittal. After approval of the preliminary report, the CONSULTANT shall submit a revised report for each submittal.

### 23.3 Voltage Drop Calculations

The Consultant shall submit voltage drop calculations showing the equation or equations used along with the number of luminaries per circuit, the length of each circuit, the size conductor or conductors used and their ohm resistance values. The voltage drop incurred on each circuit (total volts and percentage of drop) shall be calculated, and all work necessary to calculate the voltage drop values for each circuit should be presented in such a manner as to be duplicated by the District.

The Voltage Drop Calculations shall be submitted as part of the Lighting Design Analysis Report.

**23.4 FDEP Coordination and Report**

**23.5 Reference and Master Design Files**

The CONSULTANT shall prepare the Lighting Design file to include all necessary design elements and all associated reference files.

**23.6 Temporary Highway Lighting**

The CONSULTANT shall provide temporary lighting requirements for all affected phases of construction to light roadways in areas where required. The temporary lighting shall be included with the Traffic Control Plans with proper notes, illumination and uniformity criteria and details.

**23.7 Design Documentation**

The CONSULTANT shall submit a Design Documentation with each plans submittal under a separate cover and not part of the roadway documentation book. At a minimum, the design documentation shall include:

- Phase submittal checklist.
- Structural calculations for special conventional pole concrete foundations.
- Correspondence with the power company concerning new electrical service.

**23.8 Quantities for EQ Report**

***Quantities shall be included in an Estimated Quantities Report per FDM 902.***

***The CONSULTANT shall be responsible for inputting pay items and quantities into the DEPARTMENT's Project Preconstruction (PrP) System through the use of the DEPARTMENT's Designer Interface.***

***Phase I - The project shall be established in PrP by Phase I (30%). The District Preliminary Estimates Office will create the project(s) in the system upon receiving a copy of the Notice to Proceed for the design contract.***

***Phase II - A Summary of Pay Items sheet shall be prepared with Phase II and subsequent plans submittals. The Phase II (60%) submittal shall have all pay items identified with or without quantities. If quantities have not been determined at this point, the CONSULTANT shall load a quantity of "1.0".***

***Phases III & IV - At Phase III (90%) the CONSULTANT shall have all quantities loaded into PrP, with only minor change anticipated at subsequent submittals. Within PrP, the CONSULTANT shall run a Project Edit Report for the project at Phases III and IV just prior to submitting the plans to the DEPARTMENT for review. This program outputs invalid pay items that may be erroneously loaded for a project. The above shall be provided for each component set of plans (i.e., Roadway, Bridge, Signing and Marking, etc.).***

**23.9 Cost Estimate**

**23.10 Technical Special Provisions and Modified Special Provisions**

**23.11 Other Lighting Analysis**

**23.12 Field Reviews**

***The CONSULTANT shall collect information from the maintaining agencies and conduct a field review. The review should include but is not limited to the following:***

- Existing Lighting Equipment
- Load Center, Capabilities and Condition/Age
- Condition of Lighting Structure(s)
- Verification of horizontal clearances
- Verification of breakaway requirements

**23.13 Technical Meetings**

**23.14 Quality Assurance/Quality Control**

**23.15 Independent Peer Review** (Not applicable to this project)

**23.16 Supervision**

**23.17 Coordination**

## 24 LIGHTING PLANS

The CONSULTANT shall prepare a set of Lighting Plans in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums.

**24.1 Key Sheet**

**24.2 General Notes/Pay Item Notes**

**24.3 Pole Data, Legend & Criteria**

**24.4 Service Point Details**

**24.5 Project Layout**

**24.6 Plan Sheet**

**24.7 Special Details**

**24.8 Temporary Lighting Data and Details**

**24.9 Traffic Control Plan Sheets**

**24.10 Interim Standards**

**24.11 Quality Assurance/Quality Control**

***The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of traffic design drawings, specifications and other services furnished by the CONSULTANT under this contract.***

***The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all design drawings, specifications and other services prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or it may be one specifically designed for this project.***

**24.12 Supervision**

## 25 LANDSCAPE ARCHITECTURE ANALYSIS

The CONSULTANT shall analyze and document Landscape Architecture Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums.

**25.1 Data Collection**

All research required to collect data necessary to complete the initial design analysis. Includes identifying local ordinances and collection of other project data.

**25.2 Site Inventory and Analysis for Proposed Landscape**

Includes identification of opportunities and constraints for the proposed landscape project based on existing site conditions. Identify available planting areas for nursery landscape material. Summary of analysis, if required, is included in conceptual design. Roll plots may be required.

**25.3 Planting Design**

**25.3a Conceptual Planting Design**

***Includes delineation of all proposed planting types, scheme development and preliminary costs and reports. The design shall be submitted with the Phase I plans.***

***25.3a1 Report Preparation***

***25.3a2 Mainline***

***25.3a3 Interchanges, Intersections, and Rest Areas***

***25.3a4 Toll Plazas***

**25.3b Final Planting Design**

***Includes identifying the species/type, size, location, spacing, and quality of all plants.***

***25.3b1 Master Design File Creation***

***25.3b2 Mainline***

***25.3b3 Interchanges, Intersections***

***25.3b4 Toll Plazas***

**25.4 Irrigation Design**

**25.4a Conceptual Irrigation Design**

***Conceptual Design: Typically not done in master design file. Includes determination of water and power sources. Phase I design level.***

***25.4a1 Feasibility Report: Includes analysis of methods, materials and operation costs associated with proposed irrigation system design.***

***25.4a2 Mainline***

***25.4a3 Interchanges, Intersections, and Rest Areas***

***25.4a4 Toll Plazas***

**25.4b Final Irrigation Design**

***Includes all work in master design files. Irrigation Design includes, but is not limited to, the locations and sizes of pumps, pump stations, mainlines, lateral lines, irrigation heads, valves, backflow and control devices.***

***25.4b1 Mainline***

***25.4b2 Interchanges, Intersections, and Rest Areas***

***25.4b3 Toll Plazas***

**25.5 Hardscape Design**

**25.5a Conceptual Hardscape Design**

***Includes all work in master design files. Hardscape Design includes, but is not***

***limited to, sidewalks, plazas, Steps, Fountains, Walls, Pedestrian bridges, non-regulatory signs or project graphics, roadway aesthetics, site furnishings.***

**25.5b Final Hardscape Design**

***Includes all work in master design files. Hardscape Design includes, but is not limited to, sidewalks, plazas, Steps, Fountains, Walls, Pedestrian bridges, non-regulatory signs or project graphics, roadway aesthetics, site furnishings.***

**25.6 Roll Plots**

***Task includes any roll plots for the project to aid in developing final plans (landscape opportunity, disposition, site inventory and analysis, etc.)***

**25.7 Cost Estimates**

**25.8 Technical Special Provisions and Modified Special Provisions**

**25.9 Inspection Services**

***Services may include: on-site inspection, construction, observation, monitoring, supervision, and any reporting requirements.***

**25.10 Other Landscape Services**

**25.11 Outdoor Advertising**

***Includes all work required to determine locations of all outdoor advertising permitted within the roadway project limits. Includes all work required to determine the proposed view zones and the supporting documentation.***

**25.12 Field Reviews**

**25.13 Technical Meetings / Public Meetings**

**25.14 Quality Assurance/Quality Control**

**25.15 Independent Peer Review** (Not applicable to this project)

**25.16 Supervision**

**25.17 Project Coordination**

**25.18 Interdisciplinary Coordination**

## 26 LANDSCAPE ARCHITECTURE PLANS

The CONSULTANT shall prepare a set of Landscape Plans which includes the following.

**26.1 Key Sheet**

**26.2 Tabulation of Quantities**

**26.3 General Notes**

**26.4 Tree and Vegetation Protection and Relocation Plans and Tree Disposition Plans**

**26.5 Planting Plans for Linear Roadway Projects**

**26.6 Planting Plans (Interchanges and Toll Plazas)**

**26.7 Planting Details and Notes**

**26.8 Irrigation Plans for Linear Roadway Project**

**26.9 Irrigation Plans for Interchange and Toll Plazas**

**26.10 Irrigation Details and Notes**

**26.11 Hardscape Plans**

**26.12 Hardscape Details and Notes**

**26.13 Landscape Maintenance Plan**

The CONSULTANT shall include a written plan for care and maintenance of the plants and beds, hardscape, and irrigation system after the warranty period. This maintenance plan will be developed in performance based language and will be in coordination with the local government entity who assumes the maintenance obligation.

**26.14 Quality Assurance/Quality Control**

**26.15 Supervision**

## 27 SURVEY

The CONSULTANT shall perform survey tasks in accordance with all applicable statutes, manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

The CONSULTANT shall submit all survey notes and computations to document the surveys. All field survey work shall be recorded in approved media and submitted to the DEPARTMENT. Field books submitted to the DEPARTMENT must be of an approved type. The field books shall be certified by the surveyor in responsible charge of work being performed before the final product is submitted.

The survey notes shall include documentation of decisions reached from meetings, telephone conversations or site visits. All like work (such as bench lines, reference points, etc.) shall be recorded contiguously. The DEPARTMENT may not accept field survey radial

locations of section corners, platted subdivision lot and block corners, alignment control points, alignment control reference points and certified section corner references. The DEPARTMENT may instead require that these points be surveyed by true line, traverse or parallel offset.

**27.1 Horizontal Project Control (HPC)**

***Establishing or recovering the HPC may be performed by the DEPARTMENT or may be required of the CONSULTANT.***

***If by CONSULTANT*** --- Establish or recover HPC, for the purpose of establishing horizontal control on the Florida State Plane Coordinate System or datum approved by the District Surveyor (DS) or District Location Surveyor (DLS); may include primary or secondary control points. Includes analysis and processing of all field collected data, and preparation of forms.

**27.2 Vertical Project Control (VPC)**

***Establishing or recovering the VPC may be performed by the DEPARTMENT or may be required of the CONSULTANT***.

***If by CONSULTANT*** *-- Establish or recover VPC, for the purpose of establishing vertical control on datum approved by the District Surveyor (DS) or the District Location Surveyor (DLS).; may include primary or secondary vertical control points. Includes analysis and processing of all field collected data, and preparation of forms.*

**27.3 Alignment and/or Existing Right of Way (R/W) Lines**

***Refer to the FDOT Survey Handbook for requirements.***

**27.4 Aerial Targets**

***Refer to the FDOT Survey Handbook for requirements.***

**27.5 Reference Points**

***Refer to the FDOT Survey Handbook for requirements.***

**27.6 Topography/Digital Terrain Model (DTM) (3D)**

***Refer to the FDOT Survey Handbook for requirements.***

**27.7 Planimetric (2D)**

***Refer to the FDOT Survey Handbook for requirements.***

**27.8 Roadway Cross Sections/Profiles**

***Refer to the FDOT Survey Handbook for requirements.***

**27.9 Side Street Surveys**

***Refer to the FDOT Survey Handbook for requirements.***

**27.10 Underground Utilities**

***Refer to the FDOT Survey Handbook for requirements.***

**27.11 Outfall Survey**

***Refer to the FDOT Survey Handbook for requirements.***

**27.12 Drainage Survey**

***Refer to the FDOT Survey Handbook for requirements.***

**27.13 Bridge Survey (Minor/Major)**

***Refer to the FDOT Survey Handbook for requirements.***

**27.14 Channel Survey**

***Refer to the FDOT Survey Handbook for requirements.***

**27.15 Pond Site Survey**

***Refer to the FDOT Survey Handbook for requirements.***

**27.16 Mitigation Survey**

Refer to tasks of this document as applicable ***as well as the FDOT Survey Handbook for requirements.***

**27.17 Jurisdiction Line Survey**

***Refer to the FDOT Survey Handbook for requirements.***

**27.18 Geotechnical Support**

***Refer to the FDOT Survey Handbook for requirements.***

**27.19 Sectional/Grant Survey**

***Refer to the FDOT Survey Handbook for requirements.***

**27.20 Subdivision Location**

***Refer to the FDOT Survey Handbook for requirements.***

**27.21 Maintained R/W**

***Refer to the FDOT Survey Handbook for requirements.***

**27.22 Boundary Survey**

***Refer to the FDOT Survey Handbook for requirements.***

**27.23 Water Boundary Survey**

***Refer to the FDOT Survey Handbook for requirements.***

**27.24 Right of Way Staking, Parcel / Right of Way Line**

***Refer to the FDOT Survey Handbook for requirements.***

**27.25 Right of Way Monumentation**

***Refer to the FDOT Survey Handbook for requirements.***

**27.26 Line Cutting**

***Refer to the FDOT Survey Handbook for requirements.***

**27.27 Work Zone Safety**

Provide work zone as required by DEPARTMENT standards. ***Refer to the FDOT Survey Handbook for requirements.***

**27.28 Vegetation Survey**

Locate vegetation within the project limits.

**27.29 Tree Survey**

**27.30 Miscellaneous Surveys**

Refer to tasks of this document, as applicable, to perform surveys not described herein. The percent for Supplemental will be determined at negotiations. This item can only be used if authorized in writing by the District Surveyor (DS), District Location Surveyor (DLS) or their representative. ***Refer to the FDOT Survey Handbook for requirements.***

**27.31 Supplemental Surveys**

Supplemental survey days and hours are to be approved in advance by the District Design Surveyor. Refer to tasks of this document, as applicable, to perform surveys not described herein.

**27.32 Document Research** (To Be Provided by the CONSULTANT)

Perform research of documentation to support field and office efforts involving surveying and mapping.

**27.33 Field Review**

Perform verification of the field conditions as related to the collected survey data. ***Refer to the FDOT Survey Handbook for requirements.***

**27.34 Technical Meetings**

Attend meetings as required and negotiated by the Surveying and Mapping Department.

**27.35 Quality Assurance/Quality Control (QA/QC)**

Establish and implement a QA/QC plan. Also includes subconsultant review, response to comments and any resolution meetings if required, preparation of submittals for review, etc. ***Refer to the FDOT Survey Handbook for requirements.***

**27.36 Supervision**

Perform all activities required to supervise and coordinate project. These activities must be performed by the project supervisor, a Florida P.S.M. or their delegate as approved by the District Surveying Office.

**27.37 Coordination**

Coordinate survey activities with other disciplines. These activities must be performed by the project supervisor, a Florida P.S.M. or their delegate as approved by the District Surveying Office.

## 28 PHOTOGRAMMETRY

The CONSULTANT shall perform photogrammetric tasks in accordance with all applicable statues, manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

In addition to the maps and photographic products, the CONSULTANT shall submit all computations to document the mapping. This will include documentation of all decisions reached from meetings, telephone conversations, and site visits.

**28.1 Flight Preparation**

Review record data, create target diagrams, and plan the mission.

**28.2 Control Point Coordination**

Determine photo identifiable control points, and mark contact prints.

**28.3 Mobilization**

Perform pre- and post flight aircraft inspection; prepare the aircraft and camera for the mission.

**28.4 Flight Operations**

Operate the aircraft, aerial camera, and other instruments to obtain aerial photography.

**28.5 Film Processing**

Process, check, and annotate the aerial film.

**28.6 Photo Products**

Prepare contact prints, contact diapositives, and photo enlargements.

**28.7 Scanning**

Scan photographic images.

**28.8 LiDAR**

Includes data acquisition, post processing of LiDAR data to XYZ coordinates for "bare earth" classification.

**28.9 Aerial Triangulation**

Measure and adjust control within aerial images.

**28.10 Surfaces**

Includes collection of break lines and spot elevations.

**28.11 Ortho Generation**

Includes creation of final images.

**28.12 Rectified Digital Imagery (Georeferenced)**

Create the rectified digital image.

**28.13 Mosaicking**

Create the mosaic.

**28.14 Sheet Clipping**

Create plot files for sheets from the database.

**28.15 Topographics**

Prepare topographic maps including surface and planimetrics. (Photogrammetrist will not propose hours for Surfaces and Topographics.)

**28.16 Planimetrics (2D)**

Prepare 2D planimetric map.

**28.17 Drainage Basin**

Includes preparing drainage basin maps in clipped "sheet" format.

**28.18 CADD Edit**

Perform final edit of graphics for delivery of required Microstation .dgn, CADD, and Geopak files.

**28.19 Data Merging**

Merge photogrammetric files, field survey files, and data from other sources.

**28.20 Miscellaneous**

Other tasks not specifically addressed in this document.

**28.21 Field Review**

Perform on site review of maps.

**28.22 Technical Meetings**

Attend meetings as required.

**28.23 Quality Assurance/Quality Control**

Establish and implement a QC/QA plan.

**28.24 Supervision**

Supervise all photogrammetric activities. This task must be performed by the project supervisor, a Florida P.S.M.

**28.25 Coordination**

Coordinate with all elements of the project to produce a final photogrammetric

product.

## 29 MAPPING

The CONSULTANT will be responsible for the preparation of control survey maps, right of way maps, maintenance maps, sketches, other miscellaneous survey maps, and legal descriptions as required for this project in accordance with all applicable DEPARTMENT Manuals, Procedures, Handbooks, District specific requirements, and Florida Statutes. All maps, surveys and legal descriptions will be prepared under the direction of a Florida Professional Surveyor and Mapper (PSM) to DEPARTMENT size and format requirements utilizing DEPARTMENT approved software, and will be designed to provide a high degree of uniformity and maximum readability. The CONSULTANT will submit maps, legal descriptions, quality assurance check prints, checklists, electronic media files and any other documents as required for this project to the DEPARTMENT for review at stages of completion as negotiated.

**Master CADD File**

**29.1 Alignment**

**29.2 Section and 1/4 Section Lines**

**29.3 Subdivisions / Property Lines**

**29.4 Existing Right of Way**

**29.5 Topography**

**29.6 Parent Tract Properties and Existing Easements**

**29.7 Proposed Right of Way Requirements**

***As early as possible, the CONSULTANT shall provide map(s) or plan sheets accompanied by a *.kmz file reflecting the requirements for additional right-of-way. The right-of-way requirements submittal shall identify, via highlighting in varying colors (not yellow), the existing right-of-way, required right-of-way, temporary construction easements (TCEs), perpetual easements, intended license agreements (LAs), and limits of construction. In addition, this submittal will indicate in some way whether the submittal is draft or final. The requirements submittals are to be submitted electronically to the DEPARTMENT's Design Project Manager. An updated *.kmz file is expected with each resubmittal. The requirements are not considered final until indicated by the DEPARTMENT. Once the requirements are approved, the CONSULTANT shall designate each sheet as "final" and transmit to the DEPARTMENT's Design Project Manager in *.pdf format (the file name shall include the FPID number***.)

**29.8 Limits of Construction**

The limits of construction DGN file as provided by the EOR will be imported or referenced to the master CADD file. Additional labeling will be added as required. The PSM is required to advise the EOR of any noted discrepancies between the limits of construction line and the existing/proposed right of way lines, and for making adjustments as needed when a resolution is determined.

**29.9 Jurisdictional/Agency Lines**

These lines may include, but are not limited to, jurisdictional, wetland, water boundaries, and city/county limit lines.

**Sheet Files**

**29.10 Control Survey Cover Sheet** (Not applicable to this project)

**29.11 Control Survey Key Sheet** (Not applicable to this project)

**29.12 Control Survey Detail Sheet** (Not applicable to this project)

**29.13 Right of Way Map Cover Sheet** (Not applicable to this project)

**29.14 Right of Way Map Key Sheet**

**29.15 Right of Way Map Detail Sheet**

**29.16 Maintenance Map Cover Sheet**

**29.17 Maintenance Map Key Sheet**

**29.18 Maintenance Map Detail Sheet**

**29.19 Reference Point Sheet**

This sheet(s) will be included with the Control Survey Map, Right of Way Map and Maintenance Map.

**29.20 Project Control Sheet (Not applicable to this project)**

**29.21 Table of Ownerships Sheet**

**Miscellaneous Surveys and Sketches**

**29.22 Parcel Sketches**

**29.23 TIITF Sketches**

***During the Right of Way Phase, the CONSULTANT shall coordinate with the DEPARTMENT's Design Project Manager and the DEPARTMENT's Right of Way Mapping office to determine if any TIITF easements need to be modified.***

**29.24 Other Specific Purpose Survey(s)**

**29.25 Boundary Survey(s) Map**

**29.26 Right of Way Monumentation Map (To Be Provided During Post Design)**

**29.27 Title Search Map**

**29.28 Title Search Report**

This includes Title Review, Computations and Document Prep.

**29.29 Legal Descriptions**

**29.30 Final Map/Plans Comparison**

The PSM will perform a comparison of the final right of way ***or maintenance maps (whether prepared by the CONSULTANT or the DEPARTMENT)*** with the available construction plans to review the correctness of the type of parcel to be acquired and the stations/offsets to the required right of way. The PSM will coordinate with the EOR ***and the DEPARTMENT*** to resolve any conflicts or discrepancies and provide documentation of the review.

**29.31 Field Reviews**

**29.32 Technical Meetings**

**29.33 Quality Assurance/Quality Control**

**29.34 Supervision**

**29.35 Coordination**

**29.36 Supplemental Mapping**

This task is to cover efforts resulting from major design and/or development changes after 60% map development that affect the right of way requirements/parent tract property lines and may include any number of tasks. Request and approval to utilize *the* Supplemental Mapping hours will be in writing ***and approved by the District Surveyor prior to any work being done under this task.***

## 30 TERRESTRIAL MOBILE LiDAR

The CONSULTANT shall perform Terrestrial Mobile LiDAR tasks in accordance with all applicable statutes, manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

In addition to the maps and LiDAR products, the CONSULTANT shall submit all computations and reports to support the mapping. This will include documentation of all

decisions reached from meetings, telephone conversations, and site visits.

**30.1 Terrestrial Mobile LiDAR Mission Planning**

Research and prepare materials necessary for the successful execution of the Mobile LiDAR Mission. This includes but is not limited to route and safety planning, GPS /data acquisition scheduling, weather reports, and site terrain research.

**30.2 Project Control Point Coordination**

All efforts necessary to coordinate the proper placement of project ground control i.e., base stations, transformation control points, and validation points, supporting the Mobile LiDAR survey.

**30.3 Terrestrial Mobile LiDAR Mobilization**

Prepare the LiDAR sensor and vehicle for project data collection, and get specialized personnel and equipment on site.

**30.4 Terrestrial Mobile LiDAR Mission**

Perform site calibrations of LiDAR sensor and collect laser survey data, including any simultaneous base station GPS occupations and operation of any necessary safety equipment.

**30.5 Terrestrial Mobile LiDAR Processing**

Download and post process collected measurement data from Mobile LiDAR vehicle sensors, and any base stations occupied during mission. Analyze Mobile LiDAR measurement points and scan route overlaps. Separate any large point cloud data sets into manageable file sizes with corresponding indexes.

**30.6 Terrestrial Mobile Photography Processing**

Process, reference, and name digital photographic imagery files collected during Mobile LiDAR mission.

**30.7 Transformation / Adjustment**

Adjust LiDAR point cloud data to Project Control points. Create point cloud data file(s) in approved digital format. Prepare required reports of precision and accuracy achieved. If this task is performed by separate firm, or is the final product to be delivered, include effort for Survey Report.

**30.8 Classification / Editing**

Identify and attribute (classify) point cloud data into requested groups. Classify or remove erroneous points.

**30.9 Specific Surface Reporting**

Prepare reports, data and/or graphics of specific surface details such as, but not limited to pavement rutting, bridge structure clearance to roadway surface.

**30.10 Topographic (3D) Mapping**

Produce three dimensional (3D) topographic survey map(s) from collected Mobile LiDAR data. This includes final preparation of Construction Information Management (CIM) deliverable, if applicable.

**30.11 Topographic (2D) Planimetric Mapping**

Produce two dimensional (2D) planimetric map(s) from collected Mobile LiDAR data.

**30.12 CADD Edits**

Perform final edit of graphics for delivery of required CADD files. This includes final presentation of CIM deliverable, if applicable.

**30.13 Data Merging**

Merge Mobile LiDAR survey and mapping files, with other field survey files, and data from other sources.

**30.14 Miscellaneous**

Other tasks not specifically addressed in this document.

**30.15 Field Reviews**

Perform on site review of maps.

**30.16 Technical Meetings**

Attend meetings as required.

**30.17 Quality Assurance/ Quality Control**

Establish and implement a QA/QC plan.

**30.18 Supervision**

Supervise all Terrestrial Mobile LiDAR activities. This task must be performed by the project supervisor, a Florida P.S.M.

**30.19 Coordination**

Coordinate with all elements of the project to produce a final product.

## 31 ARCHITECTURE DEVELOPMENT

PHASE I - 30% DESIGN DEVELOPMENT

After receipt of written authorization to proceed from the DEPARTMENT and based on the approvals and any authorized adjustments to the Project Scope, Project Schedule or Budget, the Design Professional shall prepare, submit and present for approval by the DEPARTMENT, Phase I (30%) documents, comprised of, but not limited, to the following:

Documents

- Architectural and Civil site plan(s) showing, in addition to site survey requirements, landscaping, drainage, water retention ponds, sewage disposal and water-supply system, chilled water supply and return piping and such physical features that may adversely affect or enhance the safety, health, welfare, visual environment, or comfort of the occupants.
- A statement on the site plan signed and dated by the Design Professional or his designated subconsultant, including identifying the number of existing trees, the number and size of required trees, and the number of proposed trees to be planted, and other relevant features.
- Soil testing results including a copy of the Geotechnical Engineer's report on the site, and proposed method of treatment when unusual soil conditions or special foundation problems are indicated.
- Review of anticipated LEED points and certification level; adjust attempted points as needed to meet target certification level.

Drawing(s) to include as a minimum, the following deliverables:

- Floor plan drawn at an architectural scale that will allow the entire facility to be shown on one sheet, without breaklines, and which indicates project phasing as applicable to the Scope.
- Floor plans drawn at 3/32 inch or larger scale showing typical occupied spaces or special rooms with dimensions, sanitary facilities, stairs, elevators, identification of accessible areas for the disabled and other program requirements.
- Floor plans drawn at 3/32 inch or larger scale showing typical spaces or special rooms with dimensions, indicating door and window layouts and other relevant features.
- For alterations or additions to an existing facility: Indicate the connections and tie-ins to the existing facilities, including all existing spaces, exits, plumbing fixtures and locations and any proposed changes thereto. Distinguish between new and existing areas for renovation, remodeling, or an addition and show demolition plans of areas to be removed.
- Furniture and Equipment plans drawn at 1/8 inch or larger scale showing typical spaces or special rooms with dimensions, equipment and furnishing layouts and other relevant features.
- Reflected ceiling plans drawn at 3/32 inch or larger scale showing typical spaces or special rooms with dimensions, major lighting equipment and ceiling panel layouts.
- Roof and miscellaneous plans to be drawn at 3/32 inch or larger scale showing dimensioned features penetrations, equipment and other relevant features.

- Plumbing fixture locations and fixture unit calculations, isometrics, one line diagram and riser details, schedule of common fixtures and other relevant features.
- All exterior building elevations to illustrate and indicate the scale, finish, size and fenestration of the facility.
- Sufficient building and wall sections to show dimensions, proposed construction material, and relationship of finished floor to finished grades.
- Preliminary Structural Drawings to include plans and sections indicating systems, connections and foundations.
- Mechanical Drawings to include ceiling plans with a single line duct layout, location of grease trap(s), LP gas tank location, natural gas piping to existing utilities. Provide narrative description to include a description of proposed HVAC system equipment including the chiller, pumps, AHUs, cooling tower, electric duct heaters and other relevant features.
- Electrical Drawings include plans with lighting layouts for outdoors and major interior spaces and electrical outlets for all major spaces. Show location of electrical rooms, transformers, emergency generator. Also show locations of mechanical equipment such as chillers, compressors and air handler units and their respective electrical connections and other relevant features.
- Equipment and Furnishing Schedules to indicate major equipment that will be provided by the Contractor and those that will be provided by the DEPARTMENT or others.

Life-Safety plans to show exit strategy, rated doors, emergency wall openings, range and fume hoods, eye wash, emergency showers, ramps, vertical lifts, and other relevant features.

- By symbol, indicate fire extinguishers, fire alarm equipment, smoke vents, master valves and emergency disconnects, emergency lighting, emergency power equipment, fire sprinklers, exit signs, smoke and fire dampers, and other life-safety equipment relevant to the facility.
- By symbol, indicate connections and tie-ins to existing equipment.

For existing facilities where remodeled or renovated spaces are required and where an ADA and code conforming ramp cannot be utilized, document proposed vertical platform lifts or inclined wheelchair lifts and provide the following documents as part of or in addition to the required life safety plans:

- Floor plans of proposed vertical platform lifts including layout drawings showing corridor widths and exiting from the affected facility.
- Sketches of proposed inclined wheel chair lift to include layout drawings showing clear and affected areas of the following conditions stairway width in the folded and unfolded position, the upper and lower platform storage locations, and the means of egress from the affected areas of the facility.

Outline Specifications

- Organized to conform to the formats for outline specifications as established by the Construction Specifications Institute's current edition of Master Format on the date of

execution of the Contract.

- Complete for Divisions 2 through 16 for finishes, material, and systems including structural, HVAC, electrical, plumbing and specialty items, including fire sprinklers, alarm systems, electronic controls and computer networking components.

Other Requirements

- Provide a Life-Cycle Cost Analysis (LCCA) for review and approval. LCCA shall be by a commercially available life-cycle cost analysis program and as required by the State of Florida and the DEPARTMENT.
- Deign to meet or exceed Florida Energy Efficiency Code for Building Construction (FEEC). Submit completed FEEC forms, including calculations for mechanical systems, documenting energy efficiency ratio rating of HVAC equipment, electrical systems, insulation, and building envelope shall be submitted to the DEPARTMENT for review and approval.
- The Design Professional shall advise the DEPARTMENT of any adjustments to the budget and shall submit a fully detailed Phase I estimate of probable construction cost, projected to the expected time of bid and containing sufficient detail to provide information necessary to evaluate compliance with the Construction Budget set for this project. Format estimate and provide detail matching the organization and content of the project's Outline Specifications complete for Divisions 2 through 16.
- Provide an updated Project Development Schedule reflecting development and anticipated schedules for all subsequent project activities.
- A letter indicating, the extent of any known or suspected asbestos containing materials or other potentially hazardous materials which might require mitigation by the Owner prior to or during construction of the Project. Establish and confirm responsibility for removing the asbestos or other hazardous materials in the design development documents and coordinate with Project Development Schedule, Statement of Probable Construction Cost and other documentation.
- Preliminary color boards to review two color selection schemes.

Staff from each of the Design Professional's major technical disciplines, and subconsultants shall attend coordination, review and presentation meetings with the Owner to explain the design concept and technical resolution of their respective building or site systems.

The Design Professional shall submit five (5) sets of all documents required under this phase without additional charge, for approval by the Owner. The Design Professional shall not proceed with the next phase until the completion of all required presentations and reports and receipt of a written Authorization to Proceed with the next phase.

PHASE II - 60% DOCUMENTS:

After written Authorization to Proceed from DEPARTMENT and based on the approved Phase I documents, and any adjustments in the scope or quality of the project or in the Fixed Limit of Construction Cost authorized by DEPARTMENT, the Design Professional shall prepare for approval by DEPARTMENT, Phase II (60% Construction) Documents setting

forth in detail the requirements for the construction of the Project. The Design Professional is responsible for the full compliance of the design with all applicable codes. Phase II documents comprised of, but not limited to, the following:

Documents

- Updated Florida Energy Efficiency Code for Building Construction (FEEC) compliance forms.
- Calculations: Provide preliminary calculations for structural, mechanical and electrical systems.
- Review of anticipated LEED points and certification level; adjust attempted points as needed to meet target certification level.

Drawings

Site Plan(s) and detailing which, in addition to the Phase I requirements, indicate the following:

- Spot elevations, based on the civil grading plan, for the perimeter of the new construction, sidewalk, or any other areas pertinent to the drainage of rainwater.
- Location of storm water service for new construction roof drainage.
- Parking lot lighting poles, location and type.
- Final location for manholes, handholds, and pull boxes.
- Layout of underground distribution systems (normal power emergency power, fire alarm, master clock, intercommunication, television, telephone, security, control and spares).
- Locations of all site improvements, playground and equipment, street furniture, planters and other features.
- Details of all curbing, typical parking spaces (regular and handicap accessible), handicap ramps, directional signage, site lighting, flagpole and fence foundations, and any other site conditions pertinent to the scope of work.

A plan to delineate staging areas, site barriers, and other area designations to control the public from construction activities and traffic.

Landscape plans and details including, a plant list clearly noted and cross-referenced, details for shrub and tree plantings, identification of plants and trees to remain, to be removed or relocated, and other necessary documentation.

Irrigation plans and details delineating the entire area of the project, and addressing necessary connections, alteration, repair or replacement of any existing irrigation.

Floor plans to include the following:

- All dimensions and any cross references explaining the extent of work, wall types, or other component, assembly or direction regarding the Construction.
- Wall chases, floor drains and rainwater leaders.
- Show structural tie columns and coordinate with the floor plan.

- Cross referenced interior elevations.
- Delineate and note all built-in cabinetry or equipment.
- Identify room and door numbers with all doors having individual numbers.

Demolition Plans

Indicate required demolition activities.

- Provide separate demolition plan(s) and other drawings (elevations, sections, etc.) if the scope of work includes demolition which is too excessive to indicate in drawings depicting new construction.
- Indicate notes on the extent of the demolition: address dimensions at locations where partial walls are being removed or altered, existing room names and numbers, existing partitions, equipment, plumbing, HVAC or electrical elements,
- Include notes dealing with protection of existing areas as a result of demolition.
- Delineate any modifications to existing buildings involving structural elements within the structural documents rather than on the architectural.

Building elevations developed further than at Phase II and including delineation of building joints (including dimensionally located stucco control joints), material locations, elevation height, and other building features.

Building and wall sections to establish vertical controls and construction types. Include clear graphic, and notes on construction assemblies and systems to be used, dimensions, heights. Provide, associated detailing to delineate solutions for difficult connections.

Reflected ceiling plans to indicate ceiling types, heights, ceiling grid layout, light fixture types, mechanical diffuser and return location, and sprinkler heads if area is sprinklered. Delineate and detail any dropped soffits or joint conditions between different materials. Coordinate with architectural, electrical, mechanical, and plumbing disciplines.

Roof Plans

- Indicate all roof penetrations, including drains, scuppers, exhaust fans, and any other equipment on the roof. Show direction of roof slopes with elevations at the high and low points, type of roofing system to be used, expansion joints, typical parapet, and flashing details.
- Provide dimensions to locate all penetrations and cross-reference details.

Large scale building details as appropriate to this level of document development and as required to establish vertical controls for the Project. Include clear graphics and notes on construction assemblies and systems to be used, and dimensions and heights. Provide associated detailing to delineate solutions for difficult connections.

Interior elevations of all rooms including cross references of cabinetry details, dimensions and heights, notes indicating type of equipment (and whether equipment is in or out of contract), wall materials, finishes, and classroom equipment, and accessories.

Details of casework as necessary to appropriately delineate custom or pre-manufactured

casework. Provide appropriate schedules referencing manufacturer's numbers or catalogs, finishes, hardware, and other construction characteristics.

Details of the following:

- Door jamb, head and sill conditions.
- Wall and partition types.
- Window head, sill and jamb conditions, and anchorage methods shown, in lieu of referencing to manufacturer's standards.
- Interior signage to include classroom and building identification, emergency exiting and equipment signs, and any other items pertinent to the identification of the project. Coordinate with electrical discipline.
- Interior and exterior expansion control connections.
- Any other specialized items necessary to clearly express the intent of the project design.

Room finishes and door schedules coordinated with the floor plans, developed to 60% completion.

Structural foundation and framing plans, with associated diagrams, schedules, notes, detailing and section drawings completed sufficiently to communicate the design intent and coordination with other disciplines.

Mechanical Drawings

- Provide double line ductwork layout and HVAC equipment layout drawings with related diagrams and schematic diagrams, schedules, notes, detailing and section drawings completed sufficiently to communicate the design intent and coordination with other disciplines.
- Provide plumbing equipment, and fixture drawings with related diagrams, schedules, notes, detailing and section drawings completed sufficiently to communicate the design intent and coordination with other disciplines.
- Provide dimensioned 1/2 inch scale plans, elevations and sections of the mechanical rooms showing service, clearance, room openings, nominal equipment size, ceiling height, duct clearance between bottom of joist and top of ceiling and any ceiling mounted lighting fixtures, electrical equipment or other building assembly or component, etc.

Electrical

Provide drawings for the following systems:

- Lighting including, circuiting and luminaire identification and switching. Also provide illuminance computer print out for all indoor typical indoor spaces and parking lots.
- Convenience outlets and circuiting, special outlets and circuiting, and power systems and equipment. Provide riser diagrams for all electrical systems including master clock, intercom, fire alarm, ITV, computer networking/telephone. Also, provide for emergency and normal power distribution. Provide light fixture schedule.
- Panel schedule may be in preliminary form but circuitry must be included.

- Applicable installation details.
- General legend and list of abbreviations.
- Voltage drop computations for all main feeders.
- Short circuit analysis
- Provide 1/2" scale floor plan and wall elevations for all electrical rooms.
- Indicate surge protector for main switchboard and electrical panels.

Specifications

- Provide preliminary Project Manual including front-end documents. Completion of fill-in items in Bidding documents and other "Division 0"documents is not required.
- Provide a preliminary Division 1 based upon the standard documents provided by the Owner and edited by the Design Professional after consultation with the Owner to establish project specific requirements.
- Include progress set of all other Sections in Divisions 2-16 with each section developed to demonstrate to the Owner an understanding of the project and an appropriate level of developmental progress comparable to that of the drawings.
- Specification sections shall be organized to follow the Construction Specification Institute's (CSI) current edition of Master Format with each section developed to include CSIs standard 3-part section and page formats with full paragraph numbering.

An updated Project Development Schedule, formatted as a preliminary construction schedule reflecting continued Project development and illustrating anticipated schedules for all subsequent project activities including permitting and submittal coordination with all agencies having jurisdiction on the Project, project phasing, site, mobilization, temporary facilities, general construction sequencing, anticipated substantial completion dates, DEPARTMENT occupancy, and all other significant Project events.

Colorboards illustrating color selections, finishes, textures and aesthetic qualities for all finish materials for final review and approval by the DEPARTMENT, and to establish a final palette of material selections for development of subsequent specifications, schedules and other requirements for incorporation into the Contract Documents.

A letter from the Design Professional and each of the major technical disciplines and any necessary subconsultants or explaining how each previous comment concerning the project has been addressed or corrected.

Staff from each of the Design Professional's major technical disciplines, and subconsultants shall attend coordination, review and presentation meetings with the Owner to explain the design concept and technical resolution of their respective building or site systems.

The Design Professional shall submit five (5) sets of all documents required under this phase without additional charge, for approval by the Owner. The Design Professional shall not proceed with the next phase until the completion of all required presentations and reports and receipt of a written Authorization to Proceed with the next phase.

PHASE III - 100% CONSTRUCTION DOCUMENTS SUBMITTAL

After written Authorization to Proceed from DEPARTMENT and based on the approved Phase II documents and any adjustments in the scope or quality of the project or in the Fixed Limit of Construction Cost authorized by DEPARTMENT, the Design Professional shall prepare for approval by DEPARTMENT, Phase III (100% Construction) Documents setting forth in detail the requirements for the construction of the Project. The Design Professional is responsible for the full compliance of the design with all applicable codes. Phase III documents are to be comprised of, but not limited to, the following:

General Requirements

- Updated Florida Energy Efficiency Code for Building Construction (FEEC) compliance forms. Submit five (5) copies signed and sealed by a State of Florida registered design professional.
- Signed and Sealed/Statements of Compliance: Only complete documents, properly signed and sealed by the Project Consultant and respective subconsultants, will be accepted for review; in addition, these documents shall contain a statement of compliance by the architect or engineer of record as follows: "To the best of my knowledge and belief these drawings, and the project manual are complete, and comply with the Department of Transportation Requirements".
- Submit engineering calculations for mechanical, electrical, and structural systems in a separately bound manual.
- Review of anticipated LEED points and certification level; adjust attempted points as needed to meet target certification level.

Drawings

The drawings shall include all previous phase review requirements, and the Phase III 100% document requirements specified above, along with the following:

- Site plans including, but not limited to, area location map, legal description of property, demolition, excavation, utilities, finish grading, landscaping, mechanical, electrical, civil/structural, and architectural site plans:
- Drawings include at a minimum, the following:
- Key sheets including a table of contents and statement of compliance by the design professional. Each discipline shall have a list of abbreviations, schedule of material indications, and schedule of notations and symbols at the beginning of their section of the plans.
- Architectural drawings including floor plans, door, window and finish schedules, roof plans, elevations, sections, and details.
- Civil/Structural drawings including paving, traffic loops, service drives, parking; drainage; foundation plans; floor plans; roof plans; structural plans; sections; details; and, pipe, culvert, beam and column schedules.
- Mechanical drawings including floor plans; sections; details; riser diagrams; kitchen exhaust hoods; and, equipment, fan, and fixture schedules.
- Electrical drawings including floor plans; sections; details; riser diagrams, and fixture and panel schedules.

- The drawings should indicate that the approved mechanical/electrical systems, from the previous phases FEEC/LCCA analysis, have been incorporated into the documents.

Staff from each of the Design Professional's major technical disciplines, and subconsultants shall attend coordination, review and presentation meetings with the Owner to explain the design concept and technical resolution of their respective building or site systems.

The Design Professional shall submit five (5) sets of all documents required under this phase without additional charge, for approval by the Owner. The Design Professional shall not proceed with the next phase until the completion of all required presentations and reports and receipt of a written Authorization to Proceed with the next phase.

PHASE IV FINAL CONSTRUCTION DOCUMENTS SUBMITTAL:

After written Authorization to Proceed from DEPARTMENT and based on the approved Phase III documents and any adjustments in the scope or quality of the project or in the Fixed Limit of Construction Cost authorized by DEPARTMENT, the Design Professional shall prepare for approval by DEPARTMENT, Phase IV (Final Construction) Documents setting forth in detail the requirements for the construction of the Project: The Design Professional is responsible for the full compliance of the design with all applicable codes. Phase IV documents are to be comprised of, but not limited to, the following:

General Requirements

- This submittal is the official record set and shall be the bid documents.
- Signed and Sealed/Statements of Compliance: Only complete documents, properly signed and sealed by the Project Consultant and respective subconsultants, will be accepted for review; in addition, these documents shall contain a statement of compliance by the architect or engineer of record as follows: "To the best of my knowledge and belief these drawings, and the project manual are complete, and comply with the DEPARTMENT of Transportation Requirements".
- Submit engineering calculations for mechanical, electrical, and structural systems in a separately bound manual.
- Update anticipated LEED points and certification level; adjust attempted points as needed to meet target certification level.

Drawings

The drawings shall include all previous phase review requirements, and the Phase IV final document requirements specified above, along with the following:

- Site plans including, but not limited to, area location map, legal description of property, demolition, excavation, utilities, finish grading, landscaping, mechanical, electrical, civil/structural, and architectural site plans:
- Drawings include at a minimum, the following:
- Key sheets including a table of contents and statement of compliance by the design professional. Each discipline shall have a list of abbreviations, schedule of material indications, and schedule of notations and symbols at the beginning of their section of

the plans.

- Architectural drawings including floor plans, door, window and finish schedules, roof plans, elevations, sections, and details.
- Structural drawings including foundation plans; floor plans; roof plans; structural plans; sections; details; and, beam and column schedules.
- Mechanical drawings including floor plans; sections; details; riser diagrams; kitchen exhaust hoods; and, equipment, fan, and fixture schedules.
- Electrical drawings including floor plans; sections; details; riser diagrams, and fixture and panel schedules.
- The drawings should indicate that the approved mechanical/electrical systems, from the previous phases FEEC/LCCA analysis, have been incorporated into the documents.

Upon completion of the Final Construction Documents, the Design Professional shall submit to the Owner five (5) copies of the Drawings, Specifications, reports, programs, a final up dated Project Development Schedule, a final up-dated Statement of Probable Construction Cost and such other documents as reasonably required by Owner.

All documents for this phase shall be provided in both hard copy and in electronic media. The DEPARTMENT will approve Phase IV documents for submission to the DEPARTMENT for review and approval.

**Architectural Plans**

**31.1 Program Review/Verification**

**31.2 Key Sheet and Index of Sheets**

**31.3 General Notes, Abbreviations, Symbols, and Legend**

**31.4 Life Safety Plan(s)**

**31.5 Site Plan(s)**

**31.6 Floor Plan(s) (small scale)**

**31.7 Floor Plan(s) (large scale)**

**31.8 Exterior Elevation(s)**

**31.9 Roof Plan(s)**

**31.10 Roof Details**

**31.11 Interior Elevation(s)**

**31.12 Rest Room Plan(s) (Enlarged)**

**31.13 Rest Room Elevation(s)**

**31.14 Building Section(s)**

**31.15 Stair Section, Enlarged Stair Plan and Details**

**31.16 Reflective Ceiling Plan(s)**

**31.17 Room Finish Schedule or Finish Plan**

**31.18 Door and Window Finish Schedule**

**31.19 Door Jamb Detail(s) and Window Details**

**31.20 Exterior Wall Section(s)**

**31.21 Interior Wall Section(s)**

**31.22 Overhead Door Detail(s)**

**31.23 Curtain Wall Detail(s)**

**31.24 Fascia, Soffit and Parapet Details**

**31.25 Signage Detail(s)**

**31.26 Miscellaneous Detail(s)**

**31.27 Repetitive Sheets**

**31.28 Design Narrative Reports**

**31.29 Permitting**

**31.30 Other Pertinent Project Documentation**

**31.31 Cost Estimate**

**31.32 Technical Special Provisions and Modified Special Provisions Packages**

**31.33 Field Reviews**

**31.34 Technical Meetings**

***31.34.1 FDOT***

***31.34.2 Local Governments (cities)***

***31.34.3 Local Governments (counties)***

***31.34.4 Other Meetings***

***31.34.5 Progress Meetings***

*31.34.6 Phase Review Meetings*

**31.35 Quality Assurance/Quality Control**

**31.36 Meeting with Independent Peer Review** (Not applicable to this project)

**31.37 Supervision**

**Structural Plans**

**31.38 General Notes, Abbreviations, Symbols, and Legend**

**31.39 Foundation Plan(s) (Small Scale)**

**31.40 Foundation Plan(s) (Large Scale)**

**31.41 Slab Plan(s) (Small Scale)**

**31.42 Slab Plan(s) (Large Scale)**

**31.43 Slab Placement Plan(s)**

**31.44 Slab Placement Detail(s)**

**31.45 Foundation Section(s)**

**31.46 Foundation Detail(s)**

**31.47 Slab Section(s)**

**31.48 Slab Detail(s)**

**31.49 Roof Framing Plan(s) (Small Scale)**

**31.50 Roof Framing Plan(s) (Large Scale)**

**31.51 Roof Loading Plan(s) and Detail(s)**

**31.52 Roof Section(s)**

**31.53 Roof Detail(s)**

**31.54 Bearing Wall Section(s)**

**31.55 Bearing Wall Detail(s)**

**31.56 Column Section(s)**

**31.57 Column Detail(s)**

**31.58 Miscellaneous Sections**

**31.59 Repetitive Sheets**

**31.60 Other Pertinent Project Documentation**

**31.61 Cost Estimate**

**31.62 Technical Special Provisions and Modified Special Provisions Packages**

**31.63 Field Reviews**

**31.64 Technical Meetings**

**31.64.1 FDOT**

**31.64.2 Local Governments (cities)**

**31.64.3 Local Governments (counties)**

**31.64.4 Other Meetings**

**31.64.5 Progress Meetings**

**31.64.6 Phase Review Meetings**

**31.65 Quality Assurance/Quality Control**

**31.66 Independent Peer Review** (Not applicable to this project)

**31.67 Supervision**

**<u>Mechanical Plans</u>**

**31.68 General Notes, Abbreviations, Symbols, Legend, and Code Issues**

**31.69 Plan(s) (Small Scale)**

**31.70 Plan(s) (Large Scale)**

**31.71 Detail(s)**

**31.72 Section(s)**

**31.73 Piping Schematic(s)**

**31.74 Control Plan(s)**

**31.75 Schedule(s)**

**31.76 HVAC Calculations**

**31.77 Life Cycle Cost Analysis**

**31.78 Repetitive Sheets**

**31.79 Other Pertinent Project Documentation**

**31.80 Cost Estimate**

**31.81 Technical Special Provisions and Modified Special Provisions Packages**

**31.82 Field Reviews**

**31.83 Technical Meetings**

**31.83.1 FDOT**

**31.83.2 Local Governments (cities)**

**31.83.3 Local Governments (counties)**

**31.83.4 Other Meetings**

**31.83.5 Progress Meetings**

**31.83.6 Phase Review Meetings**

**31.84 Quality Assurance/Quality Control**

**31.85 Independent Peer Review** (Not applicable to this project)

**31.86 Supervision**

**Plumbing Plans**

**31.87 General Notes, Abbreviations, Symbols, Legend, and Code Issues**

**31.88 Plan(s) (Small Scale)**

**31.89 Plan(s) (Large Scale)**

**31.90 Isometric(s) (Large Scale)**

**31.91 Riser Diagram(s)**

**31.92 Detail(s)**

**31.93 Repetitive Sheets**

**31.94 Other Pertinent Project Documentation**

**31.95 Cost Estimate**

**31.96 Technical Special Provisions and Modified Special Provisions Packages**

**31.97 Field Reviews**

**31.98 Technical Meetings**

**31.98.1 FDOT**

**31.98.2 Local Governments (cities)**

**31.98.3 Local Governments (counties)**

**31.98.4 Other Meetings**

**31.98.5 Progress Meetings**

**31.98.6 Phase Review Meetings**

**31.99 Quality Assurance/Quality Control**

**31.100 Independent Peer Review** (Not applicable to this project)

**31.101 Supervision**

**Fire Protection Plans**

**31.102 General Notes, Abbreviations, Symbols, Legend, and Code Issues**

**31.103 Fire Protection Plan**

**31.104 Riser Diagram, Details, and Partial Plans**

**31.105 Hydraulic Calculation**

**31.106 Repetitive Sheets**

**31.107 Other Pertinent Project Documentation**

**31.108 Cost Estimate**

**31.109 Technical Special Provisions and Modified Special Provisions Packages**

**31.110 Field Reviews**

**31.111 Technical Meetings**

**31.111.1 FDOT**

**31.111.2 Local Governments (cities)**

**31.111.3 Local Governments (counties)**

**31.111.4 Other Meetings**

**31.111.5 Progress Meetings**

**31.111.6 Phase Review Meetings**

**31.112 Quality Assurance/Quality Control**

**31.113 Independent Peer Review** (Not applicable to this project)

**31.114 Supervision**

**Electrical Plans**

**31.115 General Notes, Abbreviations, Symbols, Legend, and Code Issues**

**31.116 Electrical Site Plan**

**31.117 Lighting Plan(s)**

**31.118 Lighting Fixtures Schedule(s)**

**31.119 Lighting Fixtures Detail(s)**

**31.120 Lightning Protection Plan(s)**

**31.121 Lightning Protection Details**

**31.122 Power Plan(s)**

**31.123 Power Distribution Riser Diagram(s)**

**31.124 Panel Board Schedule(s)**

**31.125 Data Plan(s)**

**31.126 Data Detail(s)**

**31.127 Communication Plan(s)**

**31.128 Communication Detail(s)**

**31.129 Security Alarm System Plan(s)**

**31.130 Miscellaneous Detail(s)**

**31.131 Repetitive Sheets**

**31.132 Energy Analysis**

**31.133 Other Pertinent Project Documentation**

**31.134 Cost Estimate**

**31.135 Technical Special Provisions and Modified Special Provisions Packages**

**31.136 Field Reviews**

**31.137 Technical Meetings**

**31.137.1 FDOT**

**31.137.2 Local Governments (cities)**

**31.137.3 Local Governments (counties)**

**31.137.4 Other Meetings**

**31.137.5 Progress Meetings**

**31.137.6 Phase Review Meetings**

**31.138 Quality Assurance/Quality Control**

**31.139 Independent Peer Review** (Not applicable to this project)

**31.140 Supervision**

**31.141 LEED Certification**

**31.142 Coordination**

**31.143 Building Information Modeling (BIM)**

## 32 NOISE BARRIERS IMPACT DESIGN ASSESSMENT IN THE DESIGN PHASE

The CONSULTANT shall fulfill the commitments resulting from the traffic noise analysis and noise barrier evaluation performed during the Project Development and Environment (PD&E) Phase, as directed and clarified by the DEPARTMENT.

The noise analysis shall be performed in accordance with the FDOT's Noise Policy (Part 2, Chapter 17 of the FDOT's PD&E Manual) and the FDOT's Traffic Noise Modeling and Analysis Guidelines. The noise analysis and noise abatement evaluation shall be performed by or supervised/reviewed by a person(s) who has attended the Department's Traffic Noise Analysis training course or has attended and successfully completed the National Highway Institute's Highway Traffic Noise Course (FHWA-NHI-142051). The Federal Highway Administration (FHWA) approved noise model, the Traffic Noise Model (TNM) Version 2.5 (or most current version) shall be used for the noise analysis, unless otherwise directed by the DEPARTMENT.

**32.1 Noise Analysis**

The CONSULTANT shall review the preferred PD&E alternative to identify any design changes that would require a reanalysis of traffic noise. Coordination will be held with the District Environmental Management Office, prior to initiating any reanalysis, to discuss possible effects of design changes on the validity of in the noise study performed during PD&E.

The CONSULTANT shall perform a land use review to identify noise sensitive sites that may have received a building permit subsequent to the PD&E noise study but prior to the Date of Public Knowledge (DPK), or to identify areas where the land use may have changed or is subject to change. New noise sensitive sites meeting DPK requirements that were not considered during the PD&E phase will be subject to a traffic noise analysis to be performed by the CONSULTANT. Additionally, noise sensitive sites analyzed in the PD&E phase may have to be re-analyzed if affected by design changes.

The CONSULTANT shall review any commitments made during the PD&E phase regarding possible traffic noise impacts to special use locations. Analysis of special use locations shall be performed using the DEPARTMENT's "A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations" document and shall be coordinated with the District Environmental Management Office.

The CONSULTANT shall review the commitments made during the PD&E phase regarding noise barrier concepts determined to be potentially feasible and reasonable. The CONSULTANT will update the analysis of feasibility and reasonableness for noise barriers recommended for further consideration during the design phase and for any additional noise barriers required, using design information (e.g., profile data, horizontal alignment data, etc.) and incorporate into the analysis any new conditions or additional costs related to noise barrier construction that have been identified during design. A design phase noise analysis will be performed at any additional locations required (based on DPK requirements or roadway design changes). Additional survey may also be required at proposed barrier locations.

Changes to, or fulfillment of, the original noise abatement commitments made during PD&E shall be documented in a Noise Study Report (NSR) Addendum to be prepared by the CONSULTANT in coordination with the District Environmental Management Office. A copy of the final NSR Addendum shall be provided to the District Environmental Management Office.

Traffic Data: The CONSULTANT shall review the traffic data obtained during the PD&E phase to determine if the data remains valid for design phase reanalysis. If the traffic data is no longer valid, the CONSULTANT shall provide to the noise analyst the following data for each road segment (i.e., intersection to intersection) for the design year with the proposed improvements to the road:

- Level of Service C (LOS C) directional volumes
- Demand peak hour volumes (peak and off-peak directions)
- Posted speed
- Percentage of heavy trucks (HT) in the design hour

- Percentage of medium trucks (MT) in the design hour
- Percentage of buses in the design hour
- Percentage of motorcycles (MC) in the design hour

With the exception of LOS C volumes, the data above shall also be provided for all interchange/highway ramps. The District Noise Specialist may also identify cross streets for which the same data is necessary. (e.g., a cross street for which noise sensitive sites are in close proximity to the project). The CONSULTANT shall contact the District Noise Specialist for direction on the format to be used for providing the traffic data and any requirements regarding approval of the data prior to its use for noise analysis. The traffic data to be used in the noise analysis must be generated by a qualified traffic engineer/planner who works for the DEPARTMENT or is a DEPARTMENT consultant.

**32.2 Noise Barrier Evaluation**

The CONSULTANT will present the data along with recommendations to the DEPARTMENT for selection of the noise barrier's locations, barriers heights and lengths to be incorporated into the design plans. These recommendations shall consider the noise barrier feasibility and reasonableness.

An evaluation of proposed noise barriers will be performed to identify any engineering conflicts or constraints. The CONSULTANT will be responsible for documenting any resolutions to engineering conflicts or issues that require modification to or preclude construction of a noise barrier. At a minimum, the engineering review will consider the following:

- Right of way needs including access rights (air, light, view, ingress/egress, outdoor advertising conflicts)
- Limited access issues
- Necessary construction and maintenance easements
- Safety issues (e.g., line of sight)
- Maintenance issues
- Structural and vegetative restrictions within easement
- Utility conflicts
- Drainage issues
- Environmental issues
- Other criteria as applicable

The CONSULTANT shall re-analyze noise barrier(s) for feasibility and reasonableness and re-establish barrier height and length if design constraints require alteration in a barrier's location or dimensions.

After reestablishing the recommended height and length of the barrier(s), the CONSULTANT shall coordinate with design engineers and the District Planning and Environmental Office to include the barrier(s) on the design plans. In addition, the CONSULTANT will present a memo to the DEPARTMENT Project Manager containing a recommendation for selection of the barrier height and length to be carried forward for public input. This recommendation shall consider amount of

noise reduction provided, engineering constraints and cost (reasonableness). In addition, the CONSULTANT will also consider the overall visual appearance in relation to the existing and proposed site conditions. This includes smoothing the profile along the top of a noise barrier to the extent possible while minimizing any loss in the amount of noise reduction provided and extending the ends of a noise barrier to cover additional receivers. Extending the ends of a noise barrier will not exceed the cost criteria and will only be performed when it is appropriate and in the public interest.

## 32.3 Public Involvement

If noise barriers are determined to be feasible and cost reasonable, the CONSULTANT shall carry out the public involvement and surveys necessary to report to the DEPARTMENT whether or not the majority of the impacted and/or benefited receptors desire the construction of a noise barrier. Input shall also be obtained from the public regarding barrier aesthetics (color and texture) on one or both sides of the barrier. The CONSULTANT shall be responsible for coordinating with local government officials.

As a minimum, the following tasks shall be completed by the CONSULTANT for public involvement purposes:

- Identification of impacted and/or benefited property owners
- Identification of renters and non-residing property owners (for a property that may be rented)
- Preparation of a mailing list (property owners, renters and non-residing property owners)
- Preparation of a summary package (including an information letter, aerial showing the noise barrier location and a survey form to document the recipients position to be sent to property owners, and occupants/non-residing property owners informing them of the proposed noise barrier
- If necessary, preparation of additional mailings and/or door-to-door/telephone surveys until a majority decision is obtained or until directed by the District Noise Specialist
- Tallying of survey results
- Noise barrier aesthetics coordination
- Public meetings coordination (including arranging the meeting location, advertisements, displays, etc.)
- Responding to public inquiries on an individual basis in coordination with the DEPARTMENT.

The CONSULTANT shall bring to the attention of the DEPARTMENT unforeseen conditions and issues which are relevant to the project decision. Other than noise barrier length, height and location, the CONSULTANT shall abstain from indicating preferences for any of the barrier options prior to or during contact with the property owners unless specifically requested to do so by the DEPARTMENT. Following the public involvement process, the CONSULTANT shall produce a final noise barrier recommendation that identifies the starting and ending points for all noise barriers,

the top elevation(s), and the aesthetic elements to be provided (e.g. – color, texture, graphics).

### 32.4 Outdoor Advertising Identification

The CONSULTANT shall identify potential noise barriers that may block the view of an existing lawfully erected sign that is governed by and conforms to state and federal requirements for land use, size, height and spacing consistent with the requirements of Florida Statute (FS) 479.25 and the FDOT Noise Policy (Part 2, Chapter 17 of the PD&E Manual). The CONSULTANT shall notify the Department's Project Manager of a potential noise barrier(s) that may affect the visibility of a legally permitted outdoor advertising sign. Resolution of the potential conflict shall be documented in the NSR and included in the environmental document.

### 32.5 Noise Study Report (NSR) Addendum

The results of noise barrier evaluations performed by the CONSULTANT shall be documented in the NSR Addendum (in accordance with Chapter 264 of the FDOT Design Manual (FDM)) and shall include the results of the computer modeling (electronically), public involvement activities and final noise abatement commitments.

### 32.6 Technical Meetings

Prior to proceeding with the noise barrier analysis, the CONSULTANT shall discuss and coordinate with the appropriate District Project Manager and the District Environmental Management Office staff. The purpose of this discussion will be for the DEPARTMENT to provide the CONSULTANT with all pertinent project information and to confirm the methodologies to be used to conduct the noise analysis. This meeting is mandatory and should occur after the Notice to Proceed is given to the CONSULTANT. It is the responsibility of the CONSULTANT to undertake the necessary action (i.e., phone calls, meetings, correspondence, etc. to ensure that District Project Manager and the District Environmental Management Office staff is kept informed of the noise analysis efforts so that these tasks are accomplished in a manner that will enhance the overall success of the project.

### 32.7 Quality Assurance/Quality Control

QA/QC reviews will be performed for all NSR Addendums submitted to the DEPARTMENT. Documentation of the QA/QC will be provided to the District Project Manager.

The CONSULTANT shall ensure that the noise barrier(s) location(s), length, height and aesthetics as shown on the final design plans are consistent with the results of the noise barrier evaluation and recommendation documented in the original NSR and/or the NSR Addendum.

### 32.8 Supervision

### 32.9 Coordination

## 33 INTELLIGENT TRANSPORTATION SYSTEMS ANALYSIS

The CONSULTANT shall analyze and document Intelligent Transportations System (ITS) Analysis Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, existing ITS standard operating procedures, strategic plans, Florida's SEMP guidelines, National and regional ITS architectures, and current design memoranda.

ITS work includes the application of sensor, computer, electronics and communication technologies and management strategies, in an integrated manner, to improve the safety and efficiency of the surface transportation system. ITS includes, but is not limited to, Advanced Traffic Management Systems (ATMS), Advanced Traveler Information Systems (ATIS), Advanced Rural Transportation Systems (ARTS), Advanced Public Transportation Systems (APTS), Advanced Highway Systems (AHS), Commercial Vehicle Operation (CVO) and Electronic Toll Collection (ETC) Systems.

In instances where the CONSULTANT performs analysis or prepares the design packages for the deployment of ITS, the CONSULTANT will not be allowed to compete as a proposing firm, or participate as a subconsultant to a proposing firm during subsequent advertisements involving work performed under this contract.

### 33.1 ITS Analysis

The CONSULTANT shall review the approved preliminary engineering report, typical section package, traffic technical memorandum and proposed geometric design alignment to identify impacts to existing ITS components (if applicable) and proposed ITS field device placements. The CONSULTANT shall review all related District ITS plans and documentation for the project corridor to ensure all cited ITS elements are included in this project, and develop a Concept of Operations (ConOps), Project Systems Engineering Management Plan (PSEMP), RTVM, and other documents as necessary for conformance with Federal Highway Administration (FHWA) requirements. The CONSULTANT shall use applicable DEPARTMENT requirements and guidelines, including, but not limited to, the ***FDOT Design Manual***, ***Standard Plans***, and Standard Specifications for Road and Bridge Construction in the design of ITS.

CCTV camera system shall provide 100 percent coverage of all mainline lanes, entrance and exit ramps, interchanges (includes view of crossing arterials), blind spots (such as those caused due to existing and proposed bridges, existing and proposed signage, vegetation, and horizontal and vertical curvatures). Cameras shall be spaced to meet the Project requirements, guidance from the ConOps, and as approved by the DEPARTMENT.

Vehicle detection devices shall be spaced as required to meet the Project requirements (speed, volume, and occupancy detection), guidance from the ConOps and as approved by the DEPARTMENT.

Both expressway and arterial dynamic message signs (DMS) shall be located to meet the Project requirements, guidance from the ConOps, and as approved by the DEPARTMENT. All FDOT FDM requirements shall be met for DMS locations. DMS locations shall be designed in conjunction with the Project's master signing design.

The CONSULTANT shall review the existing TMC Operations and develop additional incident management service requirements as necessary to support during the Construction Phase of the Project. The CONSULTANT shall coordinate with District's Traffic Operations ITS Office for additional information regarding existing Incident Management and TMC Operational Procedures (If desired by the District).

All ITS devices shall be compatible with the latest version of the National Transportation Communications for ITS Protocol (NTCIP) and compatible with SunGuide software platform.

The CONSULTANT shall design the project such that all ITS field devices and ancillary components comply with FDOT's Approved Product List (APL) and are supported within the SunGuide software or other software approved by the DEPARTMENT.

Closed Circuit Television (CCTV) Camera Assembly

The CONSULTANT shall be responsible for the design and exact field locations for the camera assemblies. The camera subsystem shall provide overlapping coverage to overcome visual blockage. Camera assemblies may include a camera lowering device (CLD).

The camera subsystem shall be designed to provide additional benefits such as the monitoring of DMS operations and security surveillance of critical infrastructure elements. ***A stand-alone DMS confirmation camera shall be designed and installed, where applicable, to support TMC operations to verify and confirm the posted DMS messages (if desired by the DEPARTMENT)***. The position, height, and design of each camera pole shall be finalized during the design phase of the project. Each site shall be designed for overall monitoring capability, as well as designed to provide safe and effective maintenance conditions.

The camera assembly deployment shall be designed to provide fields of view that give the required corridor coverage. The CONSULTANT shall determine the camera location by performing a videography study at each proposed camera site. The study shall include video at the proposed camera location and elevation with respect to the roadway elevation. The CONSULTANT shall identify the final number and locations of the camera assemblies based on the videography study.

The camera system design shall ensure that the video quality is not degraded due to wind or vibration. The CONSULTANT shall be responsible for the design of the poles and foundations to minimize the potential for vibration. The CONSULTANT shall prepare cross section plan sheets showing details of horizontal and vertical clearances of the proposed equipment with identified utilities.

The CONSULTANT shall be responsible for the design of the grounding and lightning protection system based on FDOT criteria

The CCTV camera assembly shall comply with the latest version of FDOT Standard Specifications for Road and Bridge Construction, Supplemental Specification 682.

Vehicle Detection Subsystem

The CONSULTANT shall select vehicle detection technology to meet the Project needs, ConOps requirements, and as approved by the DEPARTMENT.

The CONSULTANT shall be responsible for the design of a non-intrusive vehicle detection subsystem for the roadway facilities. The detectors shall be positioned near other ITS field device infrastructure including the fiber-optic splice vaults when feasible to reduce cost. Final detection station locations shall be based on a number of location variables identified during the design phase.

The vehicle detection subsystem shall collect and process volume, speed and occupancy data on a lane-by-lane basis for the corridor mainlines, in both directions of travel. The data will be used by the TMC for functions including detecting incidents, determining travel times, estimating traffic conditions for dissemination to travelers, sharing information with other agencies, and data archiving for transportation planning and historical data analysis. The vehicle detection subsystem shall allow for connectivity to the TMC.

Vehicle detectors must meet the Project requirements under all environmental and traffic conditions expected for the corridors. The detection system shall produce accurate volume, speed and occupancy data for all corridor traffic operation conditions. The CONSULTANT design must limit the likelihood of occlusions, other blocking of vehicles and adjacent lanes detection that degrade the detection system performance below specified accuracy. Design the system so that signs, walls, guardrails, and other physical elements do not degrade detection performance.

The system shall allow remote configuration, calibration, monitoring, and diagnostic of real-time traffic activities from a remote location, such as the TMC, using the FDOT SunGuide central software and software provided by the detection system vendor.

The CONSULTANT shall determine the exact location of the field devices to meet the desired coverage and functional requirements of vehicle detectors. The detector and associated cabinet locations shall be identified by the CONSULTANT. The CONSULTANT will coordinate and perform a detailed site survey with a factory trained and certified representative of the detection system manufacturer being proposed in their design. The site survey must confirm that the design does not exceed the operational capabilities of the proposed detection technology or device.

The CONSULTANT shall be responsible for the design of a vehicle detection system that allows travel times to be automatically calculated for roadway facilities. The travel time system may utilize a variety of vehicle detection systems, including loop, video, microwave, wireless magnetometer, and Automatic Vehicle

Identification (AVI) systems. The system shall utilize the project communications backbone in order to collect and distribute travel time data to the TMCs.

When utilizing transponders, they will be read by AVI reader equipment placed at checkpoints along the roadway. As a transponder passes a checkpoint, its data shall be acquired by the AVI system. The AVI system shall automatically add the time, date, transponder reading antenna number, and the antenna location to the transponder identification code and store the data.

Systems that rely upon transponders shall utilize supplemental toll tag readers placed at appropriate existing device locations as applicable, as well as interchanges and at intermediate locations throughout the project as required to provide the required coverage to satisfy travel time measurement requirements. Using the designed communications, the transponder information shall be forwarded to the TMC for further processing.

The CONSULTANT shall coordinate all design efforts for use of SunPass AVI transponders with the Florida's Turnpike Enterprise (FTE) Tolls group.

The vehicle detection system utilized shall comply with the latest version of FDOT Standard Specifications for Road and Bridge Construction, Specification 660.

Dynamic Message Sign Subsystem

The CONSULTANT shall be responsible for the design of the DMS subsystem for the roadway facilities.

The position of each DMS shall be finalized during the design phase of the project. The CONSULTANT shall select DMS technology, type, and display to meet the Project requirements and ConOps requirements.

The CONSULTANT shall locate the DMS to satisfy the required sign functionality and to provide the required visibility of the signs. The project communications system shall enable full control of the DMS from the TMC facilities. All DMS hardware, software and related infrastructure components shall be fully compatible with SunGuide software. All DMS shall include a dedicated confirmation camera that allows for visual verification of the messages posted on the DMS by a TMC Operator (if desired by the District).

The CONSULTANT shall design support structures to accommodate the specified DMS to meet the design functional, operational, and maintenance requirements.

The DMS shall be designed in accordance with the latest version of FDOT Standard Specifications for Road and Bridge Construction, Supplemental Specification 700.

All Highway Signing, including Dynamic Message Signs, shall comply with the latest version of FDOT Standard Specifications for Road and Bridge Construction, Specification 700.

Roadway Weather Information Systems (RWIS)

The CONSULTANT shall develop Technical Special Provisions or Modified Special Provisions for RWIS based upon the unique needs of the project. The CONSULTANT shall ensure that, each RWIS site consists of a remote processing unit (RPU), communication hardware, and determine the site specific components as required from below:

Fog/Smoke Detection sensor;

Classifying Precipitation;

Precipitation Occurrence Sensor;

Air Temperature/Relative Humidity Sensor;

Wind Speed and Direction Sensor;

RWIS Tower/Pole Structure, foundation, base, and cabinet with electrical service, and lightning protection & grounding assembly; and,

Communication hardware.

The RWIS subsystem shall include all hardware, software, and licenses to operate, including SQL database for the TMC and RWIS Central Hardware for TMC.

**33.2 Communications Plan**

The CONSULTANT shall be responsible for the development of a communications plan to determine the optimal communications medium for the project corridor. The plan shall be developed prior to submittal of Phase I plans. The plan shall identify communications media alternatives and provide a cost estimate that includes initial, operations and maintenance cost for the life cycle of the communications network. The plan shall ensure that video, voice, and data will be communicated in real-time between center-to-field and center-to-center (C2C) nodes as applicable. The communications system design must utilize non-proprietary, open-architecture, standards-based, robust, scalable, and proven technology. The communication plan analysis shall address communication and connections between field devices, communications and connections between field devices and the TMC, center-to-center communications between TMCs, and any other communication links or connections required to meet project goals. The plan must include bandwidth analysis and recommendations, needs assessment, and provide recommendations regarding minimum requirements, media, network devices, protocols, network topology, communication redundancy, future needs, spare capacity, and any communications or data sharing with other agencies.

After approval of the plan, the CONSULTANT shall submit a revised plan including a detailed design analysis for each submittal. The CONSULTANT's communications design shall include multiple redundant paths for each location, which allows for automatic switching of communications path onto a secondary path, if the primary path is impacted (if desired by the District).

The communications system components shall be in accordance with Section 783 of the latest FDOT Standard Specifications for Road and Bridge Construction (online edition).

## 33.3 Lightning Protection Analysis

The CONSULTANT shall be responsible for a complete and reliable lightning protection system design for each structure and pole and the devices attached thereto as well as ITS field device cabinets and communications hubs if not addressed by the FDOT Standard Plans/FDOT's Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System and the Interim Drawings. The ITS components of the project shall be protected from damage caused by lightning strikes, transient voltage surges, and induced current. The CONSULTANT shall design all grounding, lightning protection, and surge protection in accordance with Underwriters Lab (UL) 96A specifications.

The CONSULTANT shall include surge protection devices for all cables and conductors (power, video, and data). All Project ITS subsystems, devices and ancillary components with electrical interconnects shall be protected from voltage surges caused by lightning, transient voltage surges, and external electromagnetic fields at the time of installation of each device.

The lightning protection system shall be designed in accordance with the latest version of the FDOT Standard Specifications for Road and Bridge Construction, Supplemental Specification 785.

## 33.4 Power Subsystem

The CONSULTANT shall be responsible for an electrical design in accordance with all NEC requirements. No solar power should be utilized as a power solution for the Project unless otherwise approved by the DEPARTMENT. To enhance power reliability, the CONSULTANT shall design a power distribution and backup system consisting of, at a minimum, underground power conduits and conductors, transformers, generators, automatic transfer switches, UPS, and all associated equipment. The power backup system shall supply electrical power in event of commercial power supply failure for all system components. Power equipment shall be installed in areas to avoid wet locations. All connections and equipment shall be protected from moisture and water intrusion. The CONSULTANT shall ensure that vandal resistant mechanisms for all electrical infrastructure shall be included as part of the Design.

The CONSULTANT shall submit the power system design and voltage drop calculations for the power distribution system as part of Phase II, III, and IV design submittals. The CONSULTANT shall conduct a short circuit and protection coordination study for the designed power system and document the study as part of the power system design report.

## 33.5 Voltage Drop Calculations

The electrical design shall address allowable voltage drops per the NEC. The

CONSULTANT shall submit voltage drop calculations for any electrical circuit providing power to the ITS field devices beyond the electric utility service point. The calculations shall document the length of each circuit, its load, the size conductor or conductors used and their ohm resistance values and the required voltages from the service point to the respective ITS devices to maintain voltage drops with allowable limits. The voltage drop incurred on each circuit (total volts and percentage of drop) shall be calculated, and all work necessary to calculate the voltage drop values for each circuit should be presented in such a manner as to be duplicated by the District. Load analysis calculations shall be submitted. All voltage drop calculations shall allow for future expansion of ITS infrastructure, if identified in the Project ConOps.

### 33.6 Design Documentation

The CONSULTANT shall submit a Design Documentation Book with each plan submittal under separate cover and not part of the roadway documentation book. At a minimum, the design documentation book shall include:

- Computation books for all applicable items on plans.
- Phase submittal checklist.
- Three-way quantity check list
- Structural calculations for all structures
- Voltage drop calculations.
- Load analysis calculations.

### 33.7 Existing ITS

The CONSULTANT shall research any required legacy system or system components that may be impacted by new work, such as: existing communications; existing types, numbers, locations, models, manufacturers, and age of ITS devices; as-built plans; existing operating software; existing center-to-field devices; and C2C communications and capabilities.

### 33.8 Queue Analysis

The CONSULTANT shall perform a queue analysis at high volume interchanges and high frequency conflict / crash locations to determine optimal placement of DMS using project forecasted traffic volumes. This analysis shall be performed prior to submittal of the Phase I plans. The Consultant shall perform other traffic engineering analysis as necessary to ensure that the DMS locations are selected based on optimum message delivery to the motorists.

### 33.9 Reference and Master ITS Design File

The CONSULTANT shall prepare the ITS design file to include all necessary design elements and the reference files for topo, R/W roadway, utilities files, etc. This effort includes the design and layout of proposed ITS devices, including but not limited to: CCTV / Detection poles, DMS, detection devices, advanced traffic controllers, conduit, cabinet-related pull boxes, service points, fiber optic sizing, and communications hubs. All existing ITS infrastructure shall be referenced to the new

ITS plan sheets (if applicable).

**33.10 Reference and Master Communications Design File**

The CONSULTANT shall prepare the communication design file to include all necessary design elements and all associated reference files as well as reference files of topo, R/W, roadway, utilities files, existing ITS communications infrastructure, etc. This effort includes design and layout of proposed communications conduit, cabinet, pull boxes, splice boxes, standard route markers, communications plan overview, fiber optic splicing, connections, communications hubs, etc.

**33.11 Pole Elevation Analysis**

The CONSULTANT shall evaluate pole elevation requirements and design pole heights to meet the Project requirements including field of view; elimination of occlusion; site access for maintenance vehicles and personnel; access to pole mounted equipment, such as CCTV cameras, traffic detectors, and cabinets; and probability of lightning strike.

**33.12 Sign Panel Design Analysis**

The CONSULTANT shall design all ITS signing in conjunction with the Roadway Master Signing. This includes any static sign panel design analysis where DMS is in-laid within a static sign or for HAR signage. Expressway and arterial full size DMS shall not be co-located with other static signs.

**33.13 Quantities**

The CONSULTANT shall include all work required to determine the quantities for all items, including ITS structures and devices, interconnect, and infrastructure (such as conduits, pull boxes, splice boxes, fusion splices, splice enclosures, etc.). This work effort shall include generating accurate quantities for computing the engineer's estimate as required by the District. Use digital submittal of plans as required by the DEPARTMENT.

**33.14 Cost Estimate**

The CONSULTANT shall prepare an engineer's cost estimate for the project using historical data from the FDOT or from other Industry sources. The CONSULTANT shall also load the pay items and quantities into AASHTOWare Project Preconstruction for generating the summary of quantities and the FDOT's in-house estimates.

**33.15 Technical Special Provisions and Modified Special Provisions**

The CONSULTANT shall develop Technical Special Provisions (TSP) and Modified Special Provisions (MSP) for the specific items or conditions of the project that are not addressed in the FDOT'S Standard Specifications, Supplemental Specifications and Special Provisions.

**33.16 Other ITS Analyses**

**33.17 Field Reviews**

The CONSULTANT shall conduct a field review for the required phase submittals. The review shall identify necessary data for all elements of the project including, but not limited to, the following:

- Existing ITS Field Devices as compared with the latest FDOT standards and District requirements
- Device Make, Model, Capabilities, Condition / Age, Existence of SunGuide Software Driver
- Condition of Structure(s), cabinets, and other above-ground infrastructure and devices
- Type of Detection as Compared with Current District Standards
- Underground Infrastructure
- Proximity of other utilities
- Traffic Operations
- Any other field reconnaissance as necessary to develop a complete ITS design package

**33.18 Technical Meetings**

The CONSULTANT shall attend meetings as necessary support the project.

**33.19 Quality Assurance / Quality Control**

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of designs, drawings, specifications, and other services and work furnished by the CONSULTANT under this contract.

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all design drawings, specifications, and other documentation prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or may be one specifically designed for this project. The CONSULTANT shall utilize the District's quality control checklist. The responsible Professional Engineer that performed the Quality Control review shall sign a statement certifying that the review was conducted.

The CONSULTANT shall, without additional compensation, correct all errors or deficiencies in their works.

**33.20 Supervision**

The CONSULTANT shall provide all efforts required to supervise all technical design activities.

**33.21 Coordination**

The CONSULTANT shall coordinate with Survey, Geotech, Drainage, Structures, Lighting, Roadway Design, Utilities, municipalities, maintaining agencies and Traffic Operations to produce a final set of construction contract documents and to ensure that a high degree of accuracy for the design plans is achieved.

## 34 INTELLIGENT TRANSPORTATION SYSTEMS PLANS

The CONSULTANT shall prepare a set of ITS Plans in accordance with the Plans Preparation Manual that includes the following:

### 34.1 Key Sheet

The CONSULTANT shall prepare the key sheet in accordance with the latest format depicted in the Plans Preparation Manual/FDOT Design Manual.

MUTCD

Standard Specs

Standard Index/Standard Plans

### 34.2 Summary of Pay Items Including Designer Interface Quantity Input

The CONSULTANT shall include quantity input into Designer Interface and create the CADD generated sheet.

### 34.3 Tabulation of Quantities

The CONSULTANT shall place pay item numbers, descriptions, quantities and grand totals on the tabulation sheet(s) and provide updating of the tabulation of quantities sheets during the design period.

### 34.4 General Notes / Pay Item Notes

The CONSULTANT shall include all pertinent general notes and pay item notes as deemed fit and as established by the District.

### 34.5 Project Layout

The CONSULTANT shall prepare plan sheet(s) with an overview of the entire project that include stations and offsets, project limits, intersection locations, devices, device identification using with SunGuide nomenclature, and plan sheet coverage.

### 34.6 Typical and Special Details

The CONSULTANT shall prepare typical and / or special details for conditions in the project not addressed by the DEPARTMENT's Standard Plans/Design Standards for Design, Construction, Maintenance, and Utility Operations on the State Highway System. The CONSULTANT shall prepare special details not addressed by FDOT Design Standards/FDOT Standard Plans, including block diagrams, hub cabinets,

wiring diagrams, solar power service, and special mounting details.

## 34.7 Plan Sheet

The CONSULTANT shall prepare the ITS plan sheets utilizing the Design file to include all necessary information related to the project design elements and all associated reference files. The plan sheets shall include general and pay item notes and pay items. The plans shall depict the location of pull boxes, splice boxes, conduit runs and device locations with setbacks from the travel way. Devices shall be located by station and offset.

## 34.8 ITS Communications Plans

The CONSULTANT shall prepare plans for the communications network. These plans shall consist of block diagrams, splicing diagrams, port assignments, wiring diagrams, and all other information necessary to convey the design concept to the contractor. These plans shall be included in the ITS plan set and be prepared in a manner consistent with immediately adjacent ITS project installations (planned or installed).

The communication system shall be an open-architecture, non-proprietary, real-time, multimedia communications network. The communication system design must be compatible and completely interoperable with the existing systems.

The CONSULTANT's design shall include protecting and maintaining the existing ITS infrastructure. For locations where existing ITS infrastructure is impacted, the CONSULTANT's design shall include mitigation to minimize the downtime of existing system as per the District's requirements.

The CONSULTANT is responsible for the design of the communication infrastructure and its integration with the DEPARTMENT's communication system. Additionally, the CONSULTANT shall determine the most cost effective, best performing, communication connectivity option. The communication system must allow command and control as well as data and video transmission between the field devices and the TMCs.

Conduit paths shall be selected to provide a continuous duct system on one side of the road unless otherwise requested by the FDOT. The various components of ITS deployment will be located on both sides of the freeway and therefore under pavement bore and lateral conduits will be necessary to access equipment locations.

## 34.9 Fiber Optic Splice Diagrams

The CONSULTANT shall produce fiber optic cable splicing diagrams to show the connectivity of the fiber optic cable from its termini at field devices to the TMC. The diagrams shall denote new and existing fiber routes, splices, and terminations involved in the work. The diagrams shall identify cables by size, tube color / number and stand colors / numbers. All cables shall be identified either by numbering system identified either by numbering system identified on the plans or by bounding devices. The diagrams shall denote the types of connectors in the patch panels.

### 34.10 Lightning Protection Plans

The CONSULTANT shall include efforts to design a complete and reliable lightning protection design for each pole and associated devices, ITS device installation, as well as device cabinets and communications hubs, etc. if not already addressed in the FDOT's Standard Plans/Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System.

### 34.11 Cross Sections

The CONSULTANT shall prepare cross sections for ITS devices.

### 34.12 Guide Sign Work Sheet(s)

The CONSULTANT shall prepare the guide sign work sheets to include all necessary information related to the design of the static and dynamic message signs in the project corridor.

### 34.13 Special Service Point Details

The CONSULTANT shall design any special service point and electrical distribution system beyond the electric utility company's service point. The plan shall depict with pay items, general and plan notes the locations of transformers, switches, disconnects, conduits, pull boxes and power conductors. The plans shall identify the location of underground and overhead service points with identifying pole and transformer numbers.

### 34.14 Strain Pole Schedule

The CONSULTANT shall incorporate the schedule detail chart for concrete or steel strain poles in the plan set.

### 34.15 Overhead / Cantilever Sign Structure

For overhead truss and cantilever mounted devices, the CONSULTANT shall evaluate pertinent data and information to develop the layout for locating and mounting devices to the horizontal element of the structure, and coordinate the design of the structures with the roadway and structural engineers.

The CONSULTANT shall be responsible for determining the overhead/cantilever structure requirements for proper installation of the DMS, viewing angle and site distance requirement as per Chapter 2e – Guide Signs-Freeways and Expressways in the Manual on Uniform Traffic Control Devices (MUTCD) and Florida Department of Transportation (FDOT) Design Manual (FDM) and all other applicable manuals and guidelines as per governing regulations.

### 34.16 Other Overhead Sign Structures (Long Span, Monotube, etc.)

For other overhead sign structures, the CONSULTANT shall evaluate pertinent data and information to develop layout for locating and mounting device to the horizontal element of the structure, and coordinate the design of the structures with the roadway and structural engineers.

The CONSULTANT shall be responsible for determining the requirements for other

type of structures (long span, monotube, etc.) used as part of the project for proper installation of the DMS, viewing angle and site distance requirement as per Chapter 2e – Guide Signs-Freeways and Expressways in the Manual on Uniform Traffic Control Devices (MUTCD) and Florida Department of Transportation (FDOT) Design Manual (FDM) and all other applicable manuals and guidelines as per governing regulations.

**34.17 Temporary Traffic Control Plans (TTCP)**

The CONSULTANT shall prepare Temporary Traffic Control Plans (TTCP) to minimize impact to traffic during the construction of ITS field devices and associated communications infrastructure that will be deployed along the project corridor.

The TTCP shall strive to maintain and sustain center-to-field device connectivity and operability to the ITS field devices previously deployed along the project corridor. The TTCP effort shall consider and mitigate the impacts of the project's various construction phases so as to sustain center-to-field devices connectivity and operability, maintaining operational quality as a minimum at the level provided prior to construction start and minimizing down time as much as possible. The CONSULTANT shall develop the TTCP.

The CONSULTANT shall review the existing TMC Operations and develop additional incident management service requirements as necessary to support during the Construction Phase of the Project. The CONSULTANT shall coordinate with District's Traffic Operations ITS Office for additional information regarding existing Incident Management and TMC Operational Procedures.

**34.18 Interim Standards**

The CONSULTANT shall adhere to all Department's Interim Standards for ITS applications.

**34.19 GIS Data and Asset Management Requirements**

The CONSULTANT is responsible for providing Geographic Information System (GIS), spatial data, for the ITS components design. This information is required to integrate ITS components to the SunGuide software. A coordinate point compatible with the Florida State Plane System or FDOT's current coordinate plane system shall be collected for all ITS components part of the Project design. All GIS information provided shall be compatible with the FDOT's ITS FM asset management software. All updates shall comply with existing FDOT web standards. These support services will be performed in close coordination with District 3 GIS Project Manager and Office of Information Technology (OIT) staff.

The information shall be transferred to the as-built plans and submitted to the District in electronic format along with the as-built plans.

The Global Positioning System (GPS) unit shall be provided by the CONSULTANT and used to collect data with a minimum accuracy of three (3) meters when differentially corrected. The CONSULTANT shall collect spatial data points and physical address location for:

- DMS location (mainline and arterial)
- Vehicle detection pole location
- HAR system components
- CCTV camera pole location
- Ground mounted cabinets
- Fiber optic cable path (fiber backbone)
- Communications hubs
- Standard route markers

***Lateral fiber optic cable connections***

- Lateral power cable connections
- Pull boxes (power and fiber)
- Splice boxes
- Power drops (service point and cable path)

### 34.20 Quality Assurance / Quality Control

The CONSULTANT shall utilize the District's quality control checklist for traffic design drawings in addition to the QC effort described in section three.

### 34.21 Supervision

The CONSULTANT shall supervise all technical design activities.

## 35 GEOTECHNICAL

The CONSULTANT shall, for each project, be responsible for a complete geotechnical investigation. All work performed by the CONSULTANT shall be in accordance with DEPARTMENT standards, or as otherwise directed by the District Geotechnical Engineer. The District Geotechnical Engineer will make interpretations and changes regarding geotechnical standards, policies and procedures and provide guidance to the CONSULTANT.

Before beginning each phase of investigation and after the Notice to Proceed is given, the CONSULTANT shall submit an investigation plan for approval and meet with the DEPARTMENT's Geotechnical Engineer or representative to review the project scope and DEPARTMENT requirements. The investigation plan shall include, but not be limited to, the proposed boring locations and depths, and all existing geotechnical information from available sources to generally describe the surface and subsurface conditions of the project site. ***Upon approval of the investigation plan by the DEPARTMENT, the CONSULTANT shall submit an updated schedule prior to initiating the investigation plan.*** Additional meetings may be required to plan any additional field efforts, review plans, resolve plans/report comments, resolve responses to comments, and/or any other meetings necessary to facilitate the project.

The CONSULTANT shall notify the DEPARTMENT in adequate time to schedule a

representative to attend all related meetings and field activities.

***The CONSULTANT shall be responsible for coordination of all geotechnical related fieldwork activities. The CONSULTANT shall retain all samples until acceptance of final plans. Rock cores shall be retained as directed in writing by the District Geotechnical Engineer.***

***Artesian conditions may be present within the limits of this project. The Geotechnical CONSULTANT shall be prepared to completely seal the bore holes where the artesian conditions exist. The DEPARTMENT's Geotechnical Engineer shall be notified if and when artesian conditions are encountered.***

***CONSULTANT shall perform specialized field-testing as required by project needs.***

***All testing and classification will be performed in accordance with applicable DEPARTMENT standards, ASTM Standards or AASHTO Standards, unless otherwise specified in the Contract Documents***.

***All Standard Penetration Testing will be performed using an automatic hammer***.

**35.1 Document Collection and Review**

CONSULTANT will review printed literature including topographic maps, county agricultural maps, aerial photography (including historic photos), ground water resources, geology bulletins, potentiometric maps, pile driving records, historic construction records and other geotechnical related resources. Prior to field reconnaissance, CONSULTANT shall review U.S.G.S., S.C.S. and potentiometric maps, and identify areas with problematic soil and groundwater conditions.

Roadway

The CONSULTANT shall be responsible for coordination of all geotechnical related field work activities. The CONSULTANT shall retain all samples until acceptance of Phase IV plans. Rock cores shall be retained as directed in writing by the District Geotechnical Engineer.

Obtain pavement cores as directed in writing by the District Geotechnical Engineer.

If required by the District Geotechnical Engineer, a preliminary roadway exploration shall be performed before the Phase I plans submittal and shall include a preliminary economic analysis, a plan for geotechnical investigation, and all field reconnaissance results. The preliminary roadway exploration will be performed and results provided to the Engineer of Record to assist in setting roadway grades and locating potential problem areas. The preliminary roadway exploration shall note, but not be limited to, the following as applicable unless directed otherwise in writing by the District Geotechnical Engineer.

- ***Location survey stakes***
- ***Bench marks***
- ***Geological formation***
- ***Surface soils (i.e., potential muck pockets)***

- ***Surface water table***
- ***General site conditions***
- ***Debris and/or sanitary dump locations***
- ***Rock type***
- ***Conditions for detours***
- ***Foundation type, condition and location***
- ***Nearby structure type, condition and location***
- ***Evidence of scour***
- ***Site conditions relevant to boring plan including utilities, site access, private property access, equipment necessary, etc.***
- ***Flow through soils, dunes, exposure, flood elevations on FIRM maps***
- ***Possible obstructions to construction***

CONSULTANT shall perform specialized field-testing as required by project needs and as directed in writing by the District Geotechnical Engineer.

All laboratory testing and classification will be performed in accordance with applicable DEPARTMENT standards, ASTM Standards or AASHTO Standards, and the Florida Department of Transportation Soils and Foundations Handbook unless otherwise specified in the Contract Documents.

**35.2 Develop Detailed Boring Location Plan**

Develop a detailed boring location plan. Meet with DEPARTMENT Geotechnical Project Manager for boring plan approval. If the drilling program expects to encounter artesian conditions, the CONSULTANT shall submit a methodology(s) for plugging the borehole to the DEPARTMENT for approval prior to commencing with the boring program.

**35.3 Stake Borings/Utility Clearance**

***Auger borings with water table readings, Standard Penetration Test (SPT) borings with water table readings, and Cone Pentrometer Test (CPT) soundings with water table readings shall be performed as applicable. Submit copies of field boring logs with driller's notes via fax or email to the DEPARTMENT's Geotechnical Project Manager.***

Stake borings and cores and obtain utility clearance.

**35.4 Muck Probing**

***Probe standing water and surficial muck in a detailed pattern sufficient for determining removal limits to be shown in the Plans.***

**35.5 Coordinate and Develop Temporary Traffic Control Plans for Field Investigation**

Coordinate and develop Temporary Traffic Control Plan (TTCP). All work zone traffic control will be performed in accordance with the DEPARTMENT's Standard Plans Index 102 series.

**35.6 Drilling Access Permits**

Obtain all State, County, City, and Water Management District permits for performing geotechnical borings, as needed.

**35.7 Property Clearances**

***The CONSULTANT shall*** notify property tenants in person of drilling and field activities, if applicable. Written notification to property owners/tenants ***may be required and shall be coordinated through the DEPARTMENT's Design Project Manager.***

**35.8 Groundwater Monitoring**

Monitor groundwater, using piezometers.

**35.9 LBR / Resilient Modulus Sampling**

The Consultant will coordinate with the District Geotechnical Office regarding the need for LBR sampling and testing. When so directed, the Consultant will collect appropriate samples.

**35.10 Coordination of Field Work**

Coordinate all field work required to provide geotechnical data for the project.

**35.11 Soil and Rock Classification - Roadway**

Refine soil profiles recorded in the field, based on results of laboratory testing.

**35.12 Design LBR**

Determine design LBR values from the 90% and mean methods when LBR testing is required by the DEPARTMENT.

**35.13 Laboratory Data**

The laboratory testing for roadway shall consist of, but not be limited to, the following tests by designated procedures or directives available from the Geotechnical Project Manager:

- ***Sieve analysis conducted according to AASHTO T88 and additional applicable methods: AASHTO M-92, AASHTO M 145, AASHTO M 146, AASHTO M 147, FM 1-T87***
- ***Atterberg limits conducted according to AASHTO T89 and AASHTO T90 and additional applicable methods: FM 1-T 87, AASHTO M 146***
- ***LBR tests conducted according to FM 5-515 and additional applicable methods: Modification of AASHTO T-180 Method D, AASHTO M-92***
- ***Corrosion testing for alternate culvert materials including pH (FM 5-550), resistivity (FM 5-551), chloride content (FM 5-552) and sulfate content (FM 5-553), and/or according to FDOT directives***
- ***Consolidation tests according to AASHTO T216 with an unload/reload cycle***

***near the preconsolidation pressure***

- ***Triaxial compression tests according to AASHTO T297***
- ***Moisture content according to AASHTO T265***
- ***Conduct hydrometer analysis according to AASHTO T88***
- ***Organic content according to FM 1-T 267 and additional applicable methods: AASHTO T194, AASHTO M-231, AASHTO T87***
- ***Specific Gravity according to AASHTO T100 and additional applicable methods: AASHTO T88, ASTM D-854, AASHTO 132***
- ***Torvane sensitivity and/or pocket pentrometer tests as directed by the Project Manager/Engineer***
- ***Quantitative determination of asphalt content from asphalt paving mixtures by the ignition method according to FM 5-563.***
- ***Mechanical analysis of extracted aggregate according to FM 1-T 30 and additional applicable methods: AASHTO M-231, AASHTO T27***

***(FM – Florida Methods available from the Tallahassee Maps and Publications Department.)***

Tabulate laboratory test results for inclusion in the geotechnical report, the report of tests sheet (Roadway Soil Survey Sheet), and for any necessary calculations and analyses.

**35.14 Seasonal High Water Table**

Review the encountered ground water levels and estimate seasonal high ground water levels. Estimate seasonal low ground water levels, if requested.

**35.15 Parameters for Water Retention Areas**

Calculate parameters for water retention areas, exfiltration trenches, and/or swales.

**35.16 Delineate Limits of Unsuitable Material**

Delineate limits of unsuitable material(s) in both horizontal and vertical directions. Assist the Engineer of Record with detailing these limits on the cross-sections. If requested, prepare a plan view of the limits of unsuitable material.

**35.17 Electronic Files for Cross-Sections**

Create electronic files of boring data for cross-sections.

**35.18 Embankment Settlement and Stability**

Estimate the total magnitude and time rate of embankment settlements. Calculate the factor of safety against slope stability failure.

**35.19 Monitor Existing Structures**

Provide Roadway EOR guidance on the radius to review existing structures for monitoring.

Optional services (may be negotiated at a later date if needed): Identify existing

structures in need of settlement, vibration and/or groundwater monitoring by the contractor during construction and coordinate with the EOR and structural engineer (when applicable) to develop mitigation strategies. When there is risk of damage to the structure or facility, provide recommendations in the geotechnical report addressing project specific needs and coordinate those locations with the EOR. See ***FDOT Design Manual 307*** and Chapter 9 of the Soils and Foundations Handbook.

**35.20 Stormwater Volume Recovery and/or Background Seepage Analysis**

Perform stormwater volume recovery analysis as directed by the DEPARTMENT.

**35.21 Geotechnical Recommendations**

Provide geotechnical recommendations regarding the proposed roadway construction project including the following: description of the site/alignment, design recommendations and discussion of any special considerations (i.e., removal of unsuitable material, consolidation of weak soils, estimated settlement time/amount, groundwater control, high groundwater conditions relative to pavement base, etc.) Evaluate and recommend types of geosynthetics and properties for various applications, as required.

**35.22 Pavement Condition Survey and Pavement Evaluation Report**

***For some assigned projects, the DEPARTMENT will be responsible for the Pavement Evaluation (including coring, testing, and preparing the report). For other assigned projects, the CONSULTANT will be responsible for the Pavement Evaluation.***

***Pavement Evaluation Report (If by CONSULTANT): Pavement coring, testing, and a*** pavement ***condition*** evaluation ***shall be*** performed ***by the CONSULTANT.*** The evaluation and report submittal shall be in accordance with Section 3.2 of the Materials Manual: Flexible Pavement Coring and Evaluation. ***The CONSULTANT will be responsible for recommendations regarding milling and recycling.***

The condition of the pavement at each core location shall be observed and recorded on the Pavement Evaluation Coring and Condition Data Sheet (Form #675-030-09), and input into the Pavement Coring Reporting (PCR) system.

The CONSULTANT shall provide the District Materials Office the opportunity to review the Pavement Coring. A Coring plan shall be submitted to the District Bituminous Engineer, for concurrence, prior to commencing with any coring. The Pavement Design shall be submitted for concurrence, prior to the first phase submittal.

When the project includes adding paved shoulders, the shoulder subgrade shall be evaluated to assist the pavement designer in determining the need for subgrade stabilization or alternate pavement designs. Classification and LBR testing of subgrade soils may be necessary. Refer to the Flexible Pavement Design Manual, Chapter 8. Coordinate the extent of sampling and testing needed with the Pavement Designer and the District Geotechnical Project Manager.

## 35.23 Preliminary Roadway Report

***If a preliminary roadway investigation is performed, submit a preliminary roadway report before the Phase I plans submittal. The purpose of the preliminary roadway report will be to assist in setting road grades and locating potential problems.***

- Copies of U.S.G.S. and S.C.S. maps with project limits shown.
- A report of tests sheet that summarizes the laboratory test results, the soil stratification (i.e., soils grouped into layers of similar materials, ***including water tables plotted to elevation***) and construction recommendations relative to Standard Plans Index 120-001 and 120-002.
- The results of all tasks discussed in all previous sections regarding data interpretation and analysis.
- An appendix that contains stratified soil boring profiles, laboratory test data sheets, sample embankment settlement and stability calculations, design LBR calculation/graphs, ***seasonal high and/or low water tables,*** and other pertinent calculations.
- ***Electronic input files for plotting the boring data on the roadway and pond plan and cross section sheets.***
- The CONSULTANT will respond in writing to any changes and/or comments from the DEPARTMENT and submit any responses and revised reports.

## 35.24 Final Report

***The Final Roadway Report shall include the following:***

- Copies of U.S.G.S. and S.C.S. maps with project limits shown.
- A report of tests sheet that summarizes the laboratory test results, the soil stratification (i.e., soils grouped into layers of similar materials, ***including water tables plotted to elevation***) and construction recommendations relative to Standard Plans Index 120-001 and 120-002. The results of all tasks discussed in all previous sections regarding data interpretation and analysis.
- An appendix that contains stratified soil boring profiles, laboratory test data sheets, sample embankment settlement and stability calculations, design LBR calculation/graphs, ***seasonal high and/or low water tables***, and other pertinent calculations.
- ***Electronic input files for plotting the boring data on the plan and cross section sheets.***

***Final reports will incorporate comments from the DEPARTMENT and contain any additional field or laboratory test results, design parameters and special provisions for the contract plans. These reports will be submitted to the District Geotechnical Engineer for review prior to project completion. After review by the District Geotechnical Engineer, the reports will be submitted to the District Geotechnical Engineer in final form and will include the following:***

- ***one (1) electronic copy of the Plans,***
- ***one (1) electronic copy of the Specifications,***
- ***one (1) electronic copy of the Special Provisions***
- ***one (1) electronic copy of all reference and support documentation***

***The CONSULTANT shall submit the following deliverables in addition to the Final Report:***

- ***one (1) electronic copy of the completed Soil Boring GIS Data Sheets for publishing on FDOT's GIS Soil Boring Database according to District requirements***
- ***one (1) electronic copy of the Report of Core Boring Sheets***

***Additional final reports (up to four), aside from stated above, may be needed and requested for the DEPARTMENT's Project Manager and other disciplines.***

***The final reports, special provisions, as well as record prints, will be electronically signed and sealed by a Professional Engineer licensed in the State of Florida.***

***Draft the detailed boring/sounding standard sheet, including environmental classification, results of laboratory testing, and specialized construction requirements, for inclusion in final plans.***

**35.25 Auger Boring Drafting**

***Prepare a complete set of drawings to include all SPT borings, auger borings and other pertinent soils information in the plans. Include these drawings in the Final Geotechnical Report. Draft borings, location map, S.C.S. map and U.S.D.A. map as directed by the DEPARTMENT. Soil symbols must be consistent with those presented in the latest Florida Department of Transportation Soils and Foundations Handbook.***

**35.26 SPT Boring Drafting**

***Draft SPT borings as directed by the DEPARTMENT.***

Structures

***The CONSULTANT shall be responsible for coordination of all geotechnical related fieldwork activities. The CONSULTANT shall retain all samples until acceptance of Phase IV plans. Rock cores shall be retained as directed in writing by the District Geotechnical Engineer.***

***CONSULTANT shall perform specialized field-testing as required by needs of project and as directed in writing by the District Geotechnical Engineer.***

***All laboratory testing and classification will be performed in accordance with applicable DEPARTMENT standards, ASTM Standards or AASHTO Standards, and the Florida Department of Transportation Soils and Foundations Handbook unless otherwise specified in the Contract Documents.***

***The staff hour tasks for high embankment fills and structural foundations for bridges, box culverts, walls, high-mast lighting, overhead signs, mast arm signals,***

***strain poles, buildings, and other structures include the following:***

**35.27 Develop Detailed Boring Location Plan**

Develop a detailed boring location plan. Meet with DEPARTMENT Geotechnical Project Manager for boring plan approval. If the drilling program expects to encounter artesian conditions, the CONSULTANT shall submit a methodology(s) for plugging the borehole to the DEPARTMENT for approval prior to commencing with the boring program.

**35.28 Stake Borings/Utility Clearance**

Auger borings with water table readings, Standard Penetration Test (SPT) borings with water table readings, SPT borings for bridge decks, and Cone Pentrometer Test (CPT) soundings with water table readings shall be performed as applicable. Submit copies of field boring logs with driller's notes via fax or email to the Project Manager.

Stake borings and cores and obtain utility clearance.

**35.29 Coordinate and Develop TTCP for Field Investigation**

Coordinate and develop TTCP plan. All work zone traffic control will be performed in accordance with the DEPARTMENT's Standard Plans Index 102 series.

**35.30 Drilling Access Permits**

Obtain all State, County, City, and Water Management District permits for performing geotechnical borings, as needed.

**35.31 Property Clearances**

The CONSULTANT shall notify property tenants in person of drilling and field activities, if applicable. Written notification to property owners/tenants may be required and shall be coordinated through the DEPARTMENT's Design Project Manager.

**35.32 Collection of Corrosion Samples**

Collect corrosion samples for determination of environmental classifications.

**35.33 Coordination of Field Work**

***Coordinate all field work required to provide geotechnical data for the project.***

**35.34 Soil and Rock Classification - Structures**

Soil profiles recorded in the field should be refined based on the results of laboratory testing.

**35.35 Tabulation of Laboratory Data**

The laboratory testing for roadway shall consist of, but not be limited to, the following tests by designated procedures or directives available from the Geotechnical Project Manager:

- ***Sieve analysis conducted according to AASHTO T88 and additional applicable methods: AASHTO M-92, AASHTO M 145, AASHTO M 146, AASHTO M 147, FM 1-T87***
- ***Atterberg limits conducted according to AASHTO T89 and AASHTO T90 and additional applicable methods: FM 1-T 87, AASHTO M 146***
- ***Corrosion testing for environmental classification for substructure and superstructure including pH (FM 5-550), resistivity (FM 5-551), chloride content (FM 5-552) and sulfate content (FM 5-553), and/or according to FDOT directives***
- ***Consolidation tests according to AASHTO T216 with an unload/reload cycle near the preconsolidation pressure***
- ***Triaxial compression tests according to AASHTO T297***
- ***Moisture content according to AASHTO T265***
- ***Conduct hydrometer analysis according to AASHTO T88***
- ***Organic content according to FM 1-T 267 and additional applicable methods: AASHTO T194, AASHTO M-231, AASHTO T87***
- ***Specific Gravity according to AASHTO T100 and additional applicable methods: AASHTO T88, ASTM D-854, AASHTO 132***
- ***Torvane sensitivity and/or pocket pentrometer tests as directed by the Project Manager/Engineer***
- ***Sieve analysis (3) for D50 of streambed material according to AASHTO T88***
- ***Splitting tensile strength of intact rock core specimens according to ASTM D 3967-86, in accordance with ASTM E 122***
- ***Unconfined compressive strength of intact rock core specimens according to ASTM D 2938-79, in accordance with ASTM E 122***

***(FM – Florida Methods available from the Tallahassee Maps and Publications Department.)***

Laboratory test results should be tabulated for inclusion in the geotechnical report and for the necessary calculations and analyses.

**35.36 Estimate Design Groundwater Level for Structures**

Review encountered groundwater levels, estimate seasonal high groundwater levels, and evaluate groundwater levels for structure design.

**35.37 Selection of Foundation Alternatives (BDR)** (Not applicable to this project)

**35.38 Detailed Analysis of Selected Foundation Alternate(s)** (Not applicable to this project)

**35.39 Bridge Construction and Testing Recommendations** (Not applicable to this project)

**35.40 Lateral Load Analysis (Optional)** (Not applicable to this project)

**35.41 Walls**

Provide the design soil profile(s), which include the soil model/type of each layer and all soil engineering properties required by the Engineer of Record for conventional wall analyses and recommendations. Review wall design for geotechnical compatibility and constructability.

Evaluate the external stability of conventional retaining walls and retained earth wall systems. For retained earth wall systems, calculate and provide minimum soil reinforcement lengths versus wall heights, and soil parameters assumed in analysis. Estimate differential and total (long term and short term) settlements.

Provide wall construction recommendations.

**35.42 Sheet Pile Wall Analysis (Optional)**

Analyze sheet pile walls as directed by the DEPARTMENT.

**35.43 Design Soil Parameters for Signs, Signals, High Mast Lights, and Strain Poles and Geotechnical Recommendations**

Provide the design soil profile(s) that include the soil model/type of each layer and all soil properties required by the Engineer of Record for foundation design. Review design for geotechnical compatibility and constructability.

**35.44 Box Culvert Analysis**

- Provide the design soil profile(s) that include the soil model/type of each layer and all soil properties required by the Engineer of Record for foundation design. Review design for geotechnical compatibility and constructability.
- Provide lateral earth pressure coefficients.
- Provide box culvert construction and design recommendations.
- Estimate differential and total (long term and short term) settlements.
- Evaluate wingwall stability.

**35.45 Preliminary Report – BDR** (Not applicable for this project)

**35.46 Final Report - Bridge and Associated Walls** (Not applicable for this project)

**35.47 Final Reports - Signs, Signals, Box Culvert, Walls, and High Mast Lights**

***The final reports shall include the following:***

- Copies of U.S.G.S. and S.C.S. maps with project limits shown.
- Summary of structure background data, S.C.S., U.S.G.S., geologic and potentiometric data.
- The results of all tasks discussed in all previous sections regarding data interpretation and analysis).
- Recommendations for foundation installation, or other site preparation soils-related construction considerations with plan sheets as necessary.
- Any special provisions required for construction that are not addressed in the

DEPARTMENT's Standard specification.

- An Appendix which includes SPT and CPT boring/sounding profiles, data from any specialized field tests, engineering analysis, notes/sample calculations, sheets showing ultimate bearing capacity curves versus elevation for piles and drilled shafts, a complete FHWA check list, pile driving records (if available), and any other pertinent information.
- ***Electronic input files for plotting the boring data on the plan and cross section sheets.***

***Final reports will incorporate comments from the DEPARTMENT and contain any additional field or laboratory test results, recommended foundation alternatives along with design parameters and special provisions for the contract plans. These reports will be submitted to the District Geotechnical Engineer for review prior to project completion. After review by the District Geotechnical Engineer, the reports will be submitted to the District Geotechnical Engineer in final form and will include the following:***

- All original plan sheets (11" x 17")
- One set of all plan and specification documents, in electronic format, according to DEPARTMENT requirements
- Two sets of record prints
- Six sets of any special provisions
- All reference and support documentation used in preparation of contract plans package

***Additional final reports (up to four), aside from stated above, may be needed and requested for the DEPARTMENT's Project Manager and other disciplines.***

***The final reports, special provisions, as well as record prints, will be signed and sealed by a Professional Engineer licensed in the State of Florida.***

***Draft the detailed boring/sounding standard sheet, including environmental classification, results of laboratory testing, and specialized construction requirements, for inclusion in final plans.***

**35.48 SPT Boring Drafting**

Prepare a complete set of drawings to include all SPT borings, auger borings and other pertinent soils information in the plans. Include these drawings in the Final Geotechnical Report. Draft borings, location map, S.C.S. map and U.S.D.A. map as directed by the DEPARTMENT. Soil symbols must be consistent with those presented in the latest Florida Department of Transportation Soils and Foundations Handbook.

**35.49 Other Geotechnical**

Other geotechnical effort specifically required for the project as determined by the Department, and included in the geotechnical upset limit.

**35.50 Technical Special Provisions and Modified Special Provisions**

### 35.51 Field Reviews

Identify and note surface soil and rock conditions, surface water conditions and locations, and preliminary utility conflicts. Observe and note nearby structures and foundation types.

### 35.52 Technical Meetings

### 35.53 Quality Assurance/Quality Control

### 35.54 Supervision

### 35.55 Coordination

## 36 3D MODELING

The CONSULTANT shall analyze and document Roadway Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memorandums.

The CONSULTANT shall deliver all master design files, 3D surface design models, and all supporting digital files for the development of plans as required in the DEPARTMENT's CADD Manual.

The CONSULTANT shall prepare a 3D model using the latest FDOT software in accordance with the FDOT CADD Manual. Includes all efforts required for developing files for 3D deliverables supporting automated machine guidance for design models. This includes importing survey data and creation of existing 3D surface features and models, and developing proposed corridor models with necessary detail of features to depict the proposed project in 3D to comply with the DEPARTMENT CADD Manual.

The CONSULTANT shall add detail to the corridor and design model for 3D design. Includes many elements that contribute to this including but not limited to slope transitions, typical section transitions, changes in pavement depth, berms, swales/ditches, and other feature transitions. Extra corridor structure leads to extra assemblies, extra targeting, etc.

The CONSULTANT shall create an accurate roadway design model which includes modeling the intersections.

The CONSULTANT shall submit .dgn files associated with the 3D Model and their respective components.

### 36.1 Phase I 3D Design Model

The CONSULTANT shall prepare, submit and present for approval by the DEPARTMENT, Phase I 3D interactive model, comprised of, but not limited to: Existing features (pavement, shoulders, sidewalk, curb/gutter, utilities-if required per scope, drainage - if required per scope) and proposed corridor(s).

**36.2 Phase II 3D Design Model**

The CONSULTANT shall prepare, submit and present for approval by the DEPARTMENT, Phase II 3D model, comprised of, but not limited to: Modification of Phase I model to update the model to comply with changes based on Phase I review comments and to include the addition of ponds, floodplain compensation sites, retaining walls, barrier walls, guardrail terminals, cross overs, gore areas, side street connections, roundabouts, and driveways.

**36.3 Phase III 3D Design Model**

The CONSULTANT shall prepare, submit and present for approval by the DEPARTMENT, Phase III 3D model and deliverables files for review, comprised of, but not limited to: Modification of Phase II model to update the model to comply with changes based on Phase II review comments and to further refine areas of transition between templates, detailed grading areas, bridge approaches and end bents, median noses, shoulder transition areas, retaining walls, barrier walls and guardrail.

**36.4 Final 3D Model Design**

The CONSULTANT shall prepare for approval by DEPARTMENT, 1the Phase IV 3D model, comprised of, but not limited to: Modification of the Phase III model to update the model to comply with changes based on the Phase III review comments and to accurately generate, export and otherwise prepare the final 3D deliverable files as described in the DEPARTMENT's CADD Manual.

**36.5 Cross Section Design Files**

The CONSULTANT shall establish and develop cross section design files in accordance with the DEPARTMENT's CADD manual and ***DESIGN*** Manual. Includes all work required to establish and utilize intelligent/automated methods for creating cross sections including determining the locations for which all cross sections will be shown, existing and proposed features, cross section refinement, placement of utilities and drainage, soil boxes, R/W lines, earthwork calculations, and other required labeling.

**36.6 Template and Assembly Development (Optional)**

The CONSULTANT shall prepare for approval by DEPARTMENT, project specific templates/assemblies needed to develop the features required to deliver the 3D model.

**36.7 Quality Assurance/Quality Control**

**36.8 Supervision**

**36.9 Coordination**

## 37 PROJECT REQUIREMENTS

### 37.1 Liaison Office

The DEPARTMENT and the CONSULTANT will designate a Liaison Office and a Project Manager who shall be the representative of their respective organizations for the Project. While it is expected the CONSULTANT shall seek and receive advice from various state, regional, and local agencies, the final direction on all matters of this project remain with the DEPARTMENT Project Manager.

### 37.2 Key Personnel

The CONSULTANT's work shall be performed and directed by the key personnel identified in the proposal presentations by the CONSULTANT. Any changes in the indicated personnel shall be subject to review and approval by DEPARTMENT.

### 37.3 Progress Reporting

The CONSULTANT shall meet with the DEPARTMENT as required and shall provide a written monthly progress report with approved schedule and schedule status, or by using the earned value method that describe the work performed on each task. The report will include assessing project risk through monthly documentation of identifying and updating the risk category and approach for monitoring those tasks. Invoices shall be submitted after the DEPARTMENT approves the monthly progress report or with earned value analysis. The Project Manager will make judgment on whether work of sufficient quality and quantity has been accomplished by comparing the reported percent complete against actual work accomplished.

### 37.4 Correspondence

Copies of all written correspondence between the CONSULTANT and any party pertaining specifically to this contract shall be provided to the DEPARTMENT for their records within one (1) week of the receipt or mailing of said correspondence.

### 37.5 Professional Endorsement

The CONSULTANT shall have a Licensed Professional Engineer in the State of Florida sign and seal all reports, documents, Technical Special Provisions and Modified Special Provisions, and plans as required by DEPARTMENT standards.

### 37.6 Computer Automation

The project will be developed utilizing Computer Aided Drafting and Design (CADD) systems. The DEPARTMENT makes available software to help assure quality and conformance with policy and procedures regarding CADD. It is the responsibility of the CONSULTANT to meet the requirements in the DEPARTMENT's CADD Manual. The CONSULTANT shall submit final documents and files as described therein. The Engineer of Record must certify that the electronic plans and documents for the project meet the requirements of the DEPARTMENT's CADD Manual.

### 37.7 Coordination with Other Consultants

The CONSULTANT is to coordinate his work with any and all adjacent and integral consultants so as to effect complete and homogenous plans and specifications for the project(s) described herein.

### 37.8 Optional Services

At this time, there have been NO "optional" or "supplemental" services identified to be negotiated.

***At the DEPARTMENT's option, the CONSULTANT may be requested to provide optional services. The fee for these services shall be negotiated in accordance with the terms detailed in Exhibit B, Method of Compensation, for a fair, competitive and reasonable cost, considering the scope and complexity of the project(s). Additional services may be authorized by Letter of Authorization or supplemental amendment in accordance with paragraph 2.00 of the Standard Consultant Agreement. The additional services may include Construction Assistance, Review of Shop Drawings, Final Bridge Load Rating, update (Category II) bridge plans electronically (CADD) for the Final "As-Built" conditions, based on documents provided by the DEPARTMENT (CADD Services Only) or other Services as required.***

***The*** CONSULTANT ***may be*** requested to provide optional services ***for Load Rating Analyses***. The fee for these services shall be negotiated in accordance with the terms detailed in Exhibit B, Method of Compensation, for a fair, competitive and reasonable cost, considering the scope and complexity of the project(s).

Assuming that the proposed pavement design will increase the profile grade, the intent for this project will be to feather/taper the pavement to the bridge deck/ box culvert to prevent an increase in the dead load. A load rating analysis will be required if the pavement design results in a change in the dead load.

## 38 INVOICING LIMITS

Payment for the work accomplished shall be in accordance with Method of Compensation of this contract. Invoices shall be submitted to the DEPARTMENT ***through the DEPARTMENT's Consultant Invoice Transmittal System (CITS) or*** in a format prescribed by the DEPARTMENT. The DEPARTMENT Project Manager and the CONSULTANT shall monitor the cumulative invoiced billings to ensure the reasonableness of the billings compared to the project schedule and the work accomplished and accepted by the DEPARTMENT.

The CONSULTANT shall provide a list of key events and the associated total percentage of work considered to be complete at each event. This list shall be used to control invoicing. Payments will not be made that exceed the percentage of work for any event until those events have actually occurred and the results are acceptable to the DEPARTMENT.

**39 PROJECT COST ACCOUNTING – FOR DISTRICTWIDE / TASK DRIVEN CONTRACTS**

***Although the CONSULTANT is assigned work by Task Work Order and each Task Work Order is assigned in a single general financial project identification number for billing purposes, the CONSULTANT and its subconsultants shall have staff performing work on this contract charge their time to the nearest quarter hour to each specific project on which work is being performed. The DEPARTMENT shall provide the CONSULTANT and its subconsultants the eleven-digit project number assigned to each specific project in which the DEPARTMENT requires the CONSULTANT to capture time and cost. At any given time, there may be several specific projects in which staff would be charging time. The consultant shall provide the DEPARTMENT with each invoice the cost incurred for each specific project. Time expended by accounting personnel of the CONSULTANT in preparation of invoices associated with this contract is an unallowable direct project cost.***